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WAS IT WET OR FINE?

Being an Account of English Weather

from

Chronicles, Diaries and Registers

by

Reginald W. Jeffery, M.A., F.S.A., F.R.Hist.S.,

late Fellow and Tutor of Brasenose College, Oxford.

Author of

"The Manors and Advowson of Great Rollright",

"Thornton-le-dale"

"The Industries of Oxfordshire" (V.C.H. Oxon. II).

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CHAPTER IV.

Hailstorms.

But swiftly in shuddering gloom the splendous fail,
As the harying north-wind beareth
A cloud of skirmishing hail.

Robert Bridges.

A whirl-blast from behind the hill
Rushed o'er the wood with startling sound;
Then - all at once the air was still,
And showers of hailstones pattered round.

William Wordsworth.

In attempting to record some of the great hailstorms of English History, the writer is confronted, again and again, with doubts as to the truth that may be attached to the size of the stones as asserted by contemporaries. In this brief narrative there is no attempt to decide the credibility or non-credibility of the accounts given. The contemporary record is stated and it is for the reader to believe or disbelieve the diameters and circumferences and strange and wonderful shapes of the hailstones of the past.

In tracing the history of hailstorms it has not been found possible to carry the story back into the Anglo-Saxon period. The first reference to hail, accompanied by thunder and lightning,

together with a general remark on the badness of the year as a
1117 whole, occurs on 1 December, 1117.[1] In this case, with due
moderation, the Anglo-Saxon Chronicle makes no statement as to
1177 the size of the stones. Sixty years later, on 22 July, 1177,
in a very considerable storm, where lightning caused death and
distruction, hail is stated to have smashed down the corn so that
the harvest was poor.[2] Bad as this was, apparently, the dis-
1189 truction by hail was even worse on 24 June, 1189, when after the
storm there was a great famine.[3] So violent was a thunder and
1201 hail storm in 1201, that it 'paralysed men's minds', but beyond
this Matthew Paris fails to expand the story.[4]

The first reference to the size of hailstones occurs in
1215 1215, in the Chronicle of the Grey Friars, when the stones are
said to be 'as grete as eggys', and these, very naturally
'dystroyd cornes [and] fruttes.[5] No details are given as to the
1240 storm at Hereford in 1240.[6] The hailstones are described, on 19
1246 July, 1246, as being 'angular', and they were of such a size,
but no definite dimensions are mentioned, 'that they killed birds
and some beasts throughout the whole of England'.[7] This must have
been a very exceptional storm, and the chronicler's statement as
to the killing of cattle is something of a strain upon one's
credibility, but stranger things than this are to follow. There

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1. A.S.C.
2. Eul. Hist.
3. A.M. Wig.
4. M.P.
5. G.F.L.C.
6. A.M. Tewk.
7. M.P.

was hail in conjunction with a disastrous tempest on 19 June,
1256, 1260 1256;[1] a similar storm on 24 June, 1260, when the hail is
described as 'of immense size'.[2] No measurements are stated for
1267/8 the stones in the storm of 12 January, 1267/8,[3] nor of that of
1284 Easter day,[4] 9 April, 1284;[5] but they are declared to be 'very
1286 larger' in the storm of 2 May, 1286, when all fruit was crushed,
boughs were torn off trees and flowers rent in pieces.[6] Two
1288 years later, such was the force of the hail, on 20 July, 1288
that all the corn was destroyed,[7] and the 'dearth', so created
lasted for some years.

1545 It is not until 25 June, 1545, that another measurement is
recorded as to the size of the hail stones. There was, on that
day, a great thunderstorm, and in Lancashire stones fell 'as
bigge as a man's fyste', and had printes on them lyke faces and
somme lyke gunne-holes'.[8] Of course there are variations in
the size of fists, but a hailstone as big as the fist of a small
man, hurled through the air with the force generally associated
with hailstones, would be a most terrifying thing and would,
almost certainly, cause death. The hailstones in Kent in June,
1551 1551, must have been formidable and peculiar. They were
'of sixe, seaven or nyne inches, and divers when they melted in
ones hand were fashioned like a rose'.[9] And yet such hailstones

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1. Ibid.
2. A.M. Win.
3. Ibid and A.M. Wig.
4. Vide Ch. III.
5. A.M. Os.
6. A.M. Wig.
7. Capgrave C.
8. W.C.
9. Ibid.

appear insignificant when compared with those mentioned in the next reference. There was a great storm near Nottingham, on
1558 7 July, 1558,[1] and so terrific was the hail that, it is said, to have destroyed two little towns, Lenton and Wilford.[2] No wonder it was called 'a marvellous tempest' for the hailstones were fifteen inches in circumference.[3] It would be impossible to imagine any hailstorm surpassing this astounding record, and although, as will be shown, some approach it, no account has yet been found that suggests stones of a greater size.

1565 On 28 April, 1565 there 'fell so great an haylle that yt lay on ye ground in many placys about London more than xxiij owres and ther was iij or iiij great clapps of thundar'.[4] Again during a severe thunderstorm at Chelmsford, on 16 July, of the same year, the hail showers were so excessive that 500 acres of corn were destroyed and all 'the glass-windows on the east side of the church were beaten downe'.[5] Possibly even worse destruction was caused in Towcester between 1 a.m. and 2 p.m., on 7
1573 June, 1573, when a violent hailstorm broke over the town in which six houses were destroyed and fourteen others were damaged by the flood. In this remarkable outburst the stones are said to have been square in shape, and six inches in circumference.[6] The
1582 hailstones in Norfolk, on 12 August, 1582, were more peculiar in shape being described as 'like rowels of spurs', but they were only two or three inches in circumference.[7] Such spikey pieces

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1. Brit. C.
2. G.M.
3. _Nature_, 1930.
4. C.S. 1880.
5. Stow.
6. _Nature_, 1930.
7. Ibid.

of ice must have been agonizing to encounter, and even if they did not actually stun a man, they must have given many nasty wounds.

1626 There was a violent storm of hail on 15 June, 1626,[1] but it is more famous for the effects of rain and lightning,[2] and no details as to destruction by hail are given. The appetite for more information is whetted by a contemporary reference to Nantwich, where in a very 'terrible' thunderstorm on 30 July,
1631 1631, 'there came a strange kind of hail .... the like hath not been seen'.[3] Why was it a strange kind? The recorder fails to explain. These were no unusual incidents in the hailstorm at
1640 Cambridge on 3 August 1640,[4] nor in that in Yorkshire on 22 April,
1647 1647.[5] A more interesting storm occurred in Peterborough on 24
1649 August, 1649, when the hailstones were measured by Mr. Austen, the Precentor of the Cathedral, and found to be nine inches in circumference. 'This he left attested in a hole under his own Hand that was found in his Study at his Death'.[6] A storm of
1652 almost equal intensity took place in London, on 25 June, 1652. Evelyn speaks of it as a violent tempest of hail. Once more there is some estimate as to the size of the stones. He says 'the hail being in some places four or five inches about, brake all the glass about London, especially at Deptford and more at
1658 Greenwich'.[7] Again he records for 2 June, 1658, 'an extraordinary

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1. Thornton.
2. Vide Ch. III.
3. Hall.
4. J.W.D. and C.
5. A.E.D.
6. Morton.
7. J.E.D.

hail and rain, the season as cold as winter'; and on a third
1661/2 occasion he mentions a severe hailstorm on 17-18 February, 1661/2 but gives no details as to the stones.[1] Pepys is no more
1663 communicative than Evelyn. He states, on 2 August, 1663, that there was 'a wonderful hail-showre about 11 at night for an hour together'[2]; but he does not help us to find out why this particular 'hail-showre' was 'wonderful'.

1664 Anthony Wood, on 15 May, 1664, does give some details concerning 'a terrible shore [shower] of hail at Oxon, some as large as walnuts, others flat and rough like fritters as broad as half a crowne. The shore came from south east and I h[e]ard it a mile and more before it came to us, like the ratling of divers coaches on .... a paved way. 3 miles westward at Comnor was none of it. The next day .... was .... excessive hot'.[3] Wood adds later 'the like hail not being knowne in the memory of man or at least for 60 yeares'.[4] Wood's comparison of hailstones and
1666 walnuts is used by Pepys on 16 July, 1666, when he says that at Harwich there was a 'shower of hail as big as walnuts'.[5] On the next day there was a far worse storm in Suffolk. At Sechford Hall, one hailstone was measured and found to be 'nine inches about': at Melton there was one of eight inches; and at Snapebridge one, was said to be as much as twelve inches. At Aldborough the narrator preferred to give an example, rather

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1. Ibid.
2. S.P.D.
3. A.W.
4. Ibid.
5. S.P.D.

than a definite dimension, and stated that the stones that fell were as large as Turkey's eggs. No wonder that a man at Rumbrough had his head badly cut.[1]

1668 Concerning the hailstorms in Oxfordshire on 5 June, 1668,
1672, 1677/8 19 August, 1672, and 23 February, 1677/8, Wood fails to record any details.[2] But Dr. Hooke gives a graphic account of a storm
1680 at 10.30 a.m., on 18 May, 1680. The sky grew very dark, and thunder was heard in the distance, then began to fall, 'a good quantity of hailstones, some of the bigness of pistol bullets, others as big as pullets' eggs, and some of about 2½ inches and near three inches over the broad way: the smaller were pretty round and white like chalk or sugar-plums, the others of other shapes.[3]' Wood made a note of this same storm and writes, there 'hapned much thunder lightning and raine (especially at London). Some there did affirme upon oath that some haile stones were 6, 7, and 8 inches, which was supposed to be false: but most people said they were as pullets' eggs'.[4] One report was that they were, in London, 'as big as turkeys eggs'.[5]

Again details are missing for Oxford hailstorms on 9 June,
1686,1688 1686, and 7-8 February, 1688,[6] and for a storm at Oundle on 20
1692/3 March, 1692/3.[7] Later in that year, however, we are told that at St. Martin's-Stamford hail fell in the shape of oblong plates two inches in length and half an inch thick.[8] During a somewhat

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1. Phil. Trans. II.
2. A.W.
3. Nature, 1930.
4. A.W.
5. Hist. MSS. Com. 55. VIII.
6. A.W.
7. Morton.
8. Ibid.

curious storm that passed over North Wales and Northern England,
1697 on 29 April, 1697, the hailstones were found to weigh five ounces. They were so large and fell with such force, that they not only broke windows and destroyed green corn, but also killed fowls and even sheep.[1] This storm was followed, five days later, on 4 May, by a more violent one at Hitchin. It began at 9 a.m., and continued until 2 p.m. Some of the hailstones, were reported, to be thirteen or fourteen inches in circumference;[2] these split great trees, destroyed several hundred acres of wheat and, at one house, broke 700 panes of glass.[3] On the same day a very noteworthy hailstorm occurred in Staffordshire, in which the stones were reported to be nearly twelve inches in circumference. The ground was torn up by the force of their descent, and there were estimated to be 100,000 cart-loads of stones in the immediate district.[4] On 6 June, at Westhide, near Hereford, a hailstorm caused much damage. Many of the stones measured nine inches in circumference, and these destroyed vegetables, corn and fruit trees, and killed many fowls. Of the Herefordshire storm a contemporary wrote 'houses shook and tottered five or six miles off from the biggest tempest ... there fell hailstones as big as hen's eggs, some as big as penny loaves, some bigger ... as big as the crown of a hat, most of them in strange shapes, much like pieces of thick ice .... several cart-loads of the ice lie on the ground ... some in the forms of men's heads, hearts,

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1. Nature, 1930.
2. Cf. 7 July, 1558.
3. Nature, 1930.
4. Ibid.

hands, others in shape of swords, daggers [and] diamonds'. They were said to weigh fourteen, sixteen, or even twenty ounces. Men, horses and birds were killed and much corn was destroyed.[1] About the same time a similar storm, not more than a mile wide, and consisting of stones eight inches in circumference, tore through the country round Pontypool, Mon., and devastated the Crops.[2]

1701 There was a heavy hailstorm at Thenford, in July, 1701;[3] but a far more remarkable one at Meares Ashby, at 2 p.m., on 8
1705 August, 1705. The hailstones, in the latter case, were of perfectly transparent ice, an inch or more in circumference with spikes three inches long and half an inch thick each resembling 'the Rowel of a Spur'.[4] This terrible hail came with a gust of westerly or north westerly wind, and did immense damage to corn and glass. The storm moved very slowly, and was at Thorp Waterfield about 3 p.m., but did not reach Apthorp until 5 p.m.[5] Another tempest in which large hailstones were recorded was at
1711 Rotherham, on 7 June, 1711, when they were said to be three to five inches in circumferences; and killed several pigeons and destroyed much corn. The extreme breadth of this storm was reckoned at about half a mile; and at Bolton-upon-Dearne, the hailstones were very much less in size, but formidable enough, as they were as 'big as cherries'.[6]

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1. Hist. MSS. Com. 55. VIII.
2. Phil. Trans. II.
3. Morton.
4. <u>Cf</u>. 12 August, 1582.
5. Morton.
6. Phil. Trans. IV. ii.

1738 It is not until 1738 that the dimensions of hailstones again occur. There was a very boisterous wind accompanied by hail at Uxbridge and Dunstable, on 25 July. The stones are said to have been eight or nine inches in circumference, and in their transit windows were broken, birds killed and passengers and horses wounded.[1] Five years later, a somewhat similar storm took place,
1743 on 15 July, 1743, when 'hailstones as big as nutmegs' fell near Enfield. Windows were broken and the corn was laid in all directions. At Leicester, on the same day, even more remarkable hailstones were measured, two inches in circumference, and, in addition and as something quite distinct, there were pieces of ice, 'near five inches in length'. These two different kinds of missiles killed hundreds of small birds, and, after the storm had abated, many waggon-loads of ice were gathered in heaps.[2]
1745 Another outburst, in Yorkshire, on 11 May, 1745, 'did much damage to the fields and gardens', by means of stones 5 inches in circumference. A rather different kind of measurement was employed
1747 on 8 July, 1747, at Bristol, where there was 'a fall of hailstones several inches round, one, in particular, measur'd 5 inches round, which put into a basin and dissolved, produced near a quarter of a pint of water'.[3]

However much one is tempted to doubt these statements as to size the cumulative evidence from different sources and at different periods cannot be lightly brushed on one side. In a

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1. Brit. C.
2. Ibid.
3. G.M.

very short sharp storm at Addington Place, Surrey, on 12 June,
1748 1748, the smallest hailstone was about the size of 'a middling walnut', and many were stated to be seven inches in circumference.[1] Although no stone dimensions are given for the storm on 11
1749/50 February, 1749/50, at Newport, Mon., the hail must have been of a formidable kind as many ducks, geese and widgeon are said to have been killed on the moors in the neighbourhood.[2]

A new kind of hailstone is described in a storm in London
1750 at 5 p.m., on 11 July, 1750. The stones were flat in form and called 'ice-cakes'; they were three inches in circumference and did incredible damage to the gardens near Southwark.[3] These 'ice-cakes' were surpassed in size, during a two hours storm, in
1753 Devon and Somerset, on 2 June, 1753, when windows and tiles were smashed, and all fruit ruined, especially at Bridgewater, where the hailstones were six to seven inches in circumference.[4] Had any spectator of this storm witnessed another in London at 5 p.m., on the 24th, he might have thought very little of it as the stones were only 'as big as marbles'.[5] Then follows one of the greatest records of all, and John Wesley is the narrator. He does not say he saw it and he writes his account some time after the event; but there can be no doubt that, on 14 June, 1754, there was a colossal downpour in the Cheltenham district, about three miles in width. It consisted of 'rain mixed with hail. The

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1. Brit. C.
2. Ibid.
3. ? Nature, 1930.
4. Brit. C.
5. Ibid.

hail broke all the windows it had access to, stripped all the trees both of fruit and leaves, and destroyed every green thing. Many of the stones were as large as hen's eggs. Some were fourteen or fifteen inches round.'[1] That same summer, at 6 p.m., on 28 July, at Walton in Suffolk, hailstones fell as big as pigeons' eggs, not, however, smooth and polished but sharply jagged. They did much harm to corn, fruit and glass.[2] Why
1756 exactly the storm at Maer, Staffordshire, on 10 May, 1756, was called the largest hailstorm 'that was ever known', is difficult to understand. In the first place it only lasted a quarter of an hour, and the stones, though quite large enough to be extremely unpleasant, are merely described 'as big as hazel-nuts'. These were undoubtedly great in quantity for 'the ground was covered four inches deep'.[3] This storm was probably
1760 equalled in intensity by that at Norwich on 5 December, 1760; and was certainly excelled by another in Norfolk and the county
1761 of Northampton, on 5 August, 1761, when, it is asserted that, the hail or pieces of ice weighed one pound each.[4]

Wesley had to fight against a hailstorm, 'as scarce ever
1762 I saw in my life', near Chepstow, on 28 March, 1762.[5] The
1763 clergyman at Hunton, Kent, records on 19 August, 1763, there 'happened a much greater storm of Thunder, Wind, Hail and rain than in the year 'forty six. The hailstones being Six and

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1. J.W.J. 17.3.56. Cf. 1558, 1697, 1811.
2. Brit. C.
3. Ibid.
4. Ibid.
5. J.W.J.

Seven Inches round'.[1] This storm was famous throughout the south of England and many 'fowls were killed'.[2] Although the damage done must have been considerable, it is not comparable

1769 with that in the Isle of Ely on 16 July, 1769, when the loss to eight farmers was estimated at £3000. A large part of this was due to hail stones, which, in some cases, measured six inches in circumference, and in other fell 'in square pieces'.[3] 'Confex pieces of ice', three inches in circumference, fell in Hampshire,

1784 on 5 June, 1784, and did great damage to glass.[4] Hailstones the

1788 size of small gooseberries fell in Cheshire on 30 May, 1788;[5]

1800 and once again, on 19 October, 1800, there were hailstones 'shaped like oblate spheroids', six to nine inches in circumference.[6]

1803 The stones that fell at Leicester on 21 July, 1803, were of no particular character, but consisted of 'large pieces of ice of all shapes and great size'. These cut the foliage from the trees and destroyed quantities of corn. The account of another

1806 storm on 7 July, 1806, gives the size of the stones at Boylsben, where they are said to be three inches in circumference; and on 29 December, the hailstones, at Alnwich, were three quarters of

1807 an inch square. At Claybrooke, on 2 May, 1807, the stones were were as big as marbles, and much damage was done to crops at

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1. Reg. Hunton, Kent.
2. Thornton.
3. A.R.
4. G.W. l. XLVI.
5. Hall.
6. Nature 1930.

Leicester.[1] A different shaped hailstone fell at Eaton-under-Heywood, Salop, on 22 July. It is described as '4 to 5 inches in length resembling broken ragged Ice'. The wheat was cut off at the heads, fruit, gardnes, and glass were destroyed.[2] A still more remarkable type of stone fell at Bristol and Gloucester, on

1808 15 July, 1808. These masses of ice bore no resemblance to hailstones. 'They appeared like fragments of one vast plate of ice broken into small pieces'[3], and 'many measured from 3 to 9 inches in circumference'[4]. At Frenchay, 1400 panes of glass were broken: at Radstock the corn stalks were cut in half, and in the West of England, generally, many rooks were killed by the weight of these missiles.[5] A still further variety of stones

1809 are notified at Walthamstow, on 18 May, 1809. They were four inches in circumference and 'were solid transparent lumps of ice with a white hailstone of the usual size in the centre'. Rooks were killed, and 'geese had their eyes knocked out by the sharp angles in the hailstones'[6]. In London these stones travelled with such speed that they left clean round holes in the glass, as if made by bullets, and they came in such masses that they were collected in great drifts.[7] After such detailed information it is disappointing to read that the hailstones on 14-15 July,

1810 and 5 August, 1810, were 'large' and no more. One would have

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1. A.R.
2. Reg. Eaton-under-Heywood.
3. A.R.
4. Nature, 1930.
5. A.R.
6. Ibid.
7. Ibid.

preferred to know what the circumference was, but on that the record is silent.

In modern times the two hail-stone records seem to have been, incredible though it may be, nine to twelve inches in
1811 circumference at Bonsall, Derbyshire, at 5 p.m. on 12 May, 1811; and fifteen inches at Sheffield on the 19th, during a whirlwind.[1]
1814 When, therefore, we read, that at Rearby, on 28 July, 1814, the stones were 'bigger than a hen's egg', they appear mere trifles, though the inhabitants did not think so, as many acres of corn were totally destroyed. Nor does the size of the hailstones
1815 at Addington, Surrey, on 2 May, 1815, 'as big as marbles', any longer tend to impress. Stones of three inches in circumference are more noticeable, and these fell in Cumberland at
1816 3 p.m., on 28 July, 1816, and cut down the corn 'as with a scythe', and shattered 700 panes of glass in Netherby.[2]

A different method of measuring hail stones was adopted by the narrator of the storm at Dereham, on a Sunday, at the
1819 beginning of July, 1819, when 'the pieces of ice which fell .... weighed from one to two ounces'; while at Reepham they were 'immense pieces of ice', which 'completely cut the corn stalks'.
1824 Near Leeds, on 30 June, 1824, the hail is merely described as 'large'; but, on 14 July, in Essex the stones fell in 'long round form' about seven inches in circumfernece. These killed

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1. Cf. 1558.

2. A.R.

much poultry. Further destruction of fowls, pigeons and other birds occurred in Suffolk, on 3 August, and 'nearly 70 acres of barley appeared as if it had been half-threshed'. The hail-
1827 stones in London, on 11 October, 1827, were of 'extraordinary size', but that term might mean anything and conveys little information. Nor does the reader obtain any definite figures concerning size of hailstones in 'the tremendous' storm in
1838 Yorkshire, in the neighbourhood of Barnsley, on 4 July, 1838, although the damage to gardens and glass was very great. The cost of renewing the glass at Wentworth Castle was estimated at £500. Two days later, in Lancashire, the stones, 'mixed with pieces of ice', broke the glass in conservatories and factories.[1]

Of all the hailstorms in English History, it is probable, not from the size of the stones, but from the extent of the damage, that the one that devastated North Oxfordshire on 9
1843 August, 1843, must ever be the most memorable. The estimated damage for the county was £28,972.[2] The Oxfordshire disaster was preceded by severe thunder and lightning over Cheltenham, Evesham and Broadway. The main hailstorm was particularly observed at Enstone, where the vicar says, 'The most remarkable phenomena connected with this storm, were the immense size of the hailstones, their peculiar structure and formation, and the extraordinary roar ..... that heralded this approach'. The average size of the stones was six inches in circumference.

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1. Ibid.
2. C.C.B. St. A.

They were spherical in shape with a white opaque mass, like compressed snow, for a centre. The roar was possibly due to 'the rapid rotation of the hailstones in the course of their formation and fall ..... this roar was heard distinctly at least five or ten minutes before the hail descended'. It should be noted that 'throughout the whole of the storm there was very little wind'. Crops, in the short space of twenty minutes, were cut down and ruined. Hares, struck by hailstones, leapt up as if shot, and tumbled over dead; 'a leveret was found cut completely in two'; and pheasants, partridges and rooks were, literally, smashed.[1]

A hailstorm of some magnitude swept over London on 1 August,
1846 1846. Some of the stones weighed as much as 84 grains,[2] and falling with terrific force destroyed the glass in the picture gallery of Buckingham Palace, 7000 panes in the Houses of Parliament, and 10,000 at Burford's Panorama, Leicester Square.[3] A fortnight later stones of the shape of flattened pigeon's eggs caused considerable damage at Camberwell.[4] At Manchester, on 21
1852 June, 1852, the stones are described as pear-shaped, an inch in length, though one was said to be three inches. These bullet-like pieces of ice smashed thousands of panes of glass. On the following 13 July, in a storm at Newent, the stones were 'as large as walnuts'; and, although there were many other thunderstorms this year, no further measurements are recorded.[5] The

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1. Rev. J.J.
2. A.R.
3. Nature, 1930.
4. The Times, 1846.
5. A.R.

shape but not the exact size of the stones is given in March,
1857 1857, when they are said to be 'large and pyramidal'. In a
1859 storm reported from Beeston Observatory on 29 May, 1859, at 6.55 p.m. the stones were an inch in diameter and perfectly circular and smooth; two minutes later they were one and a quarter inches, and consisted of all shorts of shapes. Hail fell in many parts on 20 July. At Spittal Cavalry Barracks 600 panes were broken, and a wide belt of corn-land in the neighbourhood was reduced 'to useless stubble'.[1] The same storm at Wokingham was said to be worst since 1840, and the hail fell 'as large rough pieces of ice', which bruised, and in some cases broke, the limbs of rabbits, and destroyed acres of young corn. At Warrington it must have been nothing less than terrifying as 50,000 panes of glass were broken.[2] Once again, on 6-7 May,
1862 1862, there were 'hailstones of great magnitude'. The observation comes from Beeston. 'The ground was quite white from the bloom being torn off the apple-trees.' The centre of the storm was Newark, and 'the hailstones are described as being 6 inches in circumference and weighing 4 oz. each; thousands of panes of glass were broken'. At Wakefield, in the same storm, the stones were 'of extraordinary size'.[3]

Whether records have failed or whether great hailstones became more rare, it is difficult to say, it is not, however, until 3 August 1879 that the present writer has found any other

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1. Ibid.
2. Ibid.
3. Ibid.

instance of stones as much as six inches in circumference. These fell during a storm near London, and they pierced holes in zinc and slate.[1] At the same time the Castle Hotel, Richmond, had all its glass destroyed and the damage was said to be about £1000.[2] An eye-witness, in Surrey, says the storm 'passed along the valley under the Reigate hills, breaking every window and sky light in its course. The hailstones buried themselves in the pears, which were just ripening .... the noise of the storm was terrific'.[3] So colossal was the hailstorm in Lincolnshire
1883 on 3 July, 1883, that it was thought worthy of a paper before the Meterorological Society in the following November. It is said that the crops were damaged to the extent of £20,000, and that plate glass ½ in. thick was shattered. The stones were described as solid lumps of ice weighing from 2 oz. to 6 oz. and since were measured as much as 6 inc. in circumference.[4]

Again there is a lapse of record or of storm until the
1887 destructive hailstorm over England on 20 May, 1887, by which great damage was done to fruit-trees and flowers. Similar
1889 damage was done on 2 June, 1889, in Wales and Lancashire, and at Garstang, in particular, there was a shower of ice 'some pieces measuring 4 inches in circumference'. These were surpassed by
1893 the stones which fell at Richmond, Yorkshire, on 8 July, 1893, which were six inches in circumference, so that there were still stones of a 'superior quality'.[5] And yet as the nineteenth

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1. Nature, 1930.
2. A.R.
3. The Times, 1931.
4. Ibid.
5. A.R.

century grows older one tends to think that hailstones grow smaller, and are more like peas than 'the fist of a man'. At
1897 Colchester, however, on 24 June, 1897, the stones far outclassed peas, though they did not attain to the 'fist of a man'. They were as large as hen's eggs. Glass was broken, corn destroyed, and birds killed. The loss in Essex was exceptionally great, as there had been no bad hailstorms for some years and the farmers had ceased to insure.[1] Another instance of where the hail must have been of considerable size and quantity, but no actual
1901 dimensions are recorded, was on 10 August, 1901, when it blocked the drains and caused flooding in different parts of Derbyshire and Yorkshire.[2] There were severe hailstorms, without definition
1902 as to size of stones, at Maidstone, on 10 September, 1902,[3] and
1906 in the south east of England on 2 August, 1906.[4] At Wheatley
1910 and Water Stock, near Oxford, on 9 June, 1910, the hail is said to have fallen as 'large lumps' of ice. Such was the size and force of some of these stones that they were buried three inches
1914 in the ground.[5] In the London district, on 14 June, 1914, there was a great thunderstorm with hail,[6] during which birds were
1924 killed.[7] London was again visited on 22 July, 1924; but the worst storm for this year was on 19 August at Brymore House,

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1. Nature, 1930.
2. Ibid.
3. Ibid.
4. Ibid.
5. Ibid.
6. Ibid.
7. A.R.

near Carrington, Somerset, where 'hailstones, not of a large size, lay on the ground to the depth of 3 or 4 inches.[1]' Once more, and finally, as far as this record is concerned, London
1929 had a hail storm of some force on 20 July, 1929.

It would seem as if the frequency of hailstorms was on the decline, and that the impetus and size of the stones were growing less; or is it that our ancestors exaggerated the awful danger to which they were exposed by a blow on the head from a lump of ice measuring, estimated by them in terror, fifteen inches in circumference?

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1. <u>Nature</u>, 1930.

Chapter V.

Rain and Floods.

A continual dropping in a very rainy day and a contentious woman are alike.

Proverbs XXVI. 15.

The hooded clouds, like friars,
Tell their beads in drops of rain.

Henry Longfellow.

The floods are roused and will not soon be weary.

William Wordsworth.

Pytheas, in the fourth century B.C., complained of the lack of sunshine in this island, and designated what is now called England, 'that land of clouds and rain'. In the early part of the first century A.D., Strabo said that the climate here was 'rainy and misty', and , some forty years later, Tacitus wrote 'the climate is unpleasant with constant rain and cloud; but the severest cold is unknown'. History undoubtedly shows, taking one period with another, that England is a 'land of clouds and rain'. In fact so usual must rain have always been that the very early chroniclers have little or nothing to say on the subject.

It may well be inferred, therefore, that when the chroniclers do make any reference to rain, it must have been of a very heavy and disastrous character. Thus the scribe of the
1041 Anglo Saxon Chronicle feels bound to report, in 1041, a failure of the crops and the loss of many head of cattle 'through

bad weather'[1], because the occasion was outstanding, as was
1087 the famine of 1087[2], clue to 'the unseasonableness' of the
1089 weather, or that of 1089,[3] when the harvest was protracted
as late as November. From this time onwards great rains
receive proper recognition.

1091 Owing to the perpetual downpour of 1091, the Thames rose
with alarming rapidity, and the old wooden 'London Bridge'
was swept away, the lands on each side being considerably
flooded.[4] Four years later, owing to continuous rains, 'the
1095 earth-fruits were all turned to mediocrity'[5] which seems a
strange expression though the meaning is obvious. There was
1117 much the same story in 1117, when there was a great deficiency
of corn 'through the rains that ceased not almost all the year.'[6]
1125 The summer of 1125, was a very wet one, and on 10 August, there
were great floods, in which men were drowned, bridges shattered
and corn destroyed.[7] Rain played its part, too, in the politic-
al history of the day. Fighting was made no easier at Lincoln,
1141 on 2 February, 1141, by the heavy rains which had swollen the
river Witham, and, after Stephen's defeat, many of his follow-
ers were drowned, in trying to make their escape. Nor was
the day much better when terms were arranged between Queen
Matilda and the Bishop of Winchester, on 2 March,. at Wherwell
near Andover, for 'mist and rain cast a gloom over the proceed-

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1. A. S. C.
2. W. of M.
3. A. S. C.
4. Thornton.
5. A. S. C.
6. Ibid.
7. Ibid.

1154 -ings'.[1] In mid August, 1154, a very heavy rain stopped the harvest and caused such floods that 'broke down towers and ancient walls'.[2] It is impossible to refrain from wondering why the Chronicle made this particular selection. What 'tower' had he in his mind when he wrote the account ? There
1193 was another great storm of wind and rain on 14 January, 1193,[3] and this was followed by 'a lack of the fruits of the earth';[4]
1198 while, five years later, on 20 July, 1198, there was rain,'as never before seen'.[5]

1201 The great storm of May, 1201 is said to have'paralysed men's minds',[6] but whether this was due to thunder and lightning, or to the rain, is impossible to say, as all seem to have been very violent. The year, celebrated for King John's sealing of Magna Carta, was also notorious for unfavourable weather as 'thys yere felle gret raynes'.[7] Unfortunately, no annalist thought it worth while to say whether the 'grett raynes' fell during June, at Runnymede, on that unprepossessing monarch and on the blustering gang of barons. The monkish recorder of Bermondsey was evidently endeavouring to be
1221 very accurate, when, he said, on 5 July, 1221, 'it rained all day and all night and the following day and the following night'.[8] If this is literally true it means a continuous

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1. Sir J.R.F. of Eng.
2. Enl. Hist.
3. A.M. Berg.
4. M.P.
5. Ibid.
6. Ibid.
7. G.F.L.C.
8. A.M. Ber

downpour for forty-eight hours, and this, though not impossible, would be very exceptional, and modern registration would probably have proved it not quite accurate. In such cases, however, it is what the individual feels is the truth rather than the minute number of inches and hours of time. The mere narrative of the quantity of rain is dwarfed into insignificance when one reads of one of the most remarkable rain storms in England or anywhere else. Edmund Rich, afterwards Archbishop of Canterbury, according to hagiographers, 'while ... preaching one afternoon in the cemetery on the north side of All Saints Church (Oxford) by his prayer averted from the whole audience the rain which descended in torrents all round'.[1] This rain-story in English History remains unequalled and certainly unbeaten.

For a really wet year, from end to end, with tumultuous
1223 floods, that of 1223, stands out preeminent, when all the fruit failed to reach maturity, and when, even by the end of November, all 'the crops were not gathered into the granaries'.[2] It is
1227 probable that this was a more disastrous year than 1227, for although the floods were excessive in the latter, they came in December, by which time what harvest there was would have
1228 been garnered.[3] These floods continued into the next year, and at the beginning of autumn the loss of crops was very

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1. H.C.M.L.
2. M.P.
3. A.M. Wig.

1233 heavy.[1] The summer of 1233, especially towards the end of May,[2] was famous for its inundations, and, amongst other damage, it is said that mills were washed 'violently' from their sites.[3] After a very intemperate season, there were more floods on
1234 12 July, 1234, destroying haystacks and bridges.[4] Mills are
1236 again mentioned as being washed away, on 10 February, 1236, when the Thames was in such torrential flood, that the water entered Westminster Hall and boats might have been rowed to and fro.[5] Even more serious floods occurred in the same year, on 12 November, when men, oxen and sheep perished in the swirl of waters.[6]

A terribly dismal picture is drawn by Matthew Paris of the
1239 year 1239. He says that from about Easter for four months there was almost continuous rain. The earth was converted into mud, marshes were extended and crops were destroyed.[7] It is a little difficult to realize what it must have meant to our ancestors in those medieval times. The land was without any form of artificial drainage, and the water-logged fields must have been impossible to cultivate or traverse. One can only surmise that knowing nothing better they took the rough
1240 with the smooth. Was the rainfall at Gloucester, in 1240, as bad ?[8] No chronicler would have entered it in his precious

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1. M.P.
2. A.M. Os. & Wig.
3. M.P.
4. Ibid.
5. M.P.
6. M. of W.
7. M.P.
8. A.M. Tewk.

tome unless it had been exceptional. All details are wanting; but the very nudity of the record casts upon it a gloomy hue, and it must have been something far from the ordinary.

Once again the Thames was in flood owing to persistent
1242 rain, on 20 November, 1242. It is stated that at Lambeth it was six miles wide, and, if thisis true, the misery and suffering are beyond modern imagination. No wonder that Matthew Paris says that many houses were damaged; nor is it surprising that Westminster Hall was so flooded that entry was only possible on horseback.[1] Further serious floods occur-
1246 red on 19 July, 1246;[2] and it would be natural to expect the
1247 same in the next year, as it was a very wet one, and up to 11 July, there was hardly a single fine day,[3] though there is no specific reference to inundations. There can, however, be
1249 no doubt about the floods in the early part of June, 1249, particularly in the neighbourhood of Abingdon, where a chapel, houses, saltworks, mills, bridges and sheep-folds were all swept away.[4]

It would probably not be incorrect to imagine that Matthew
1251 Paris was referring, on 17 September, 1251, to what would now be called a cloud-burst. He says that first there was darkness that could be felt, 'and most horrible', and then there was a positive 'cataract of rain'. Possibly there was some-

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1. M.P.
2. Ibid.
3. Ibid.
4. Ibid.

1254 -thing of the same kind in June, and again, on 26 October, 1254, 1255 when men 'were staggered'.[1] St. Valentine's Day, 1255, was famous for a downpour that continued day and night,[2] but no details are given of its ill consequences, though this may well have been the beginning of evil days.

1256 The years 1256-8 were distressful and disastrous for the English peasantry. There was, in that most miserable period, a famine throughout the land, and as the Petition of the Barons states, men dropped down dead from the aforesaid 'caristia'. The 'evil days' began on 19 June, 1256, when there were 'incomparable' storms leading to devastating floods, in which many mills were destroyed and, 'it seemed as if the waters of Wencalion had been restored'.[3] At Bedford the floods were particularly severe, and six houses were completely swept away. This, however, was not confined to that locality, for similar disasters happened elsewhere. The rains of 1 February to 1 1257 May, 1257, rendered the whole kingdom, 'marshy and muddy', and for three months the country became 'sterile and unfruitful'.[4] Because of these circumstances this year closed with appalling famine; probably the worst in English history. Wheat was sold at the prodigious sum of £1 .. 4 .. 0 per quarter. 'So distressed were the people for sustenance that we are told that many of the citizens (of London) were seen fighting for carrion and dead dogs, and that they drank the wash generally given to

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1. Ibid.
2. Ibid.
3. Ibid.
4. Ibid.

swine; and, according to report, no less than twenty thousand persons died in London'.[1] The distress continued up to December, 1258, when there was still further rain.[2] In fact this year was as bad as the two previous; 'most part of the corn rotted in the ground', and so many died of starvation that they had to be buried in pits.[3]

It is probable that there were wet years and heavy rainstorms between 1258 and 1265. Certainly there are mild periods, sharp frosts and thunderstorms, but the chroniclers are sufficiently engaged in recording the political history of their time, and recounting the variations in fortune of the Baronial opposition to Henry III, to have space to record for future generations mere rain storms.[4] One storm, however, is thought worthy of mention, and that, 'the astounding downfall of rain', when the great Simon de Montfort lost his life at Evesham on
1265 4 August, 1265.[5] It was a national disaster, and, as already shown elsewhere, in that superstitious age, the vagaries of the English climate were only too likely to be construed into the anger of God against those who slew the imagined friend of the people. In a more peaceful age, the annalist falls back upon the weather as an item of interest, as today, it is
1268 a topic of conversation. In April, 1268, there were torrents of rain lasting for fifteen days;[6] but these were quite sur-
1270 passed on 25 March, 1270, when the downpour and the ensuing

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1. Thornton.
2. M.P.
3. W. of M.C.
4. _Vide_ ch. III
5. A.M. Os. & Wig.
6. A.M. Os.

inundations were never so bad since the days of the flood of Noah.'[1] Even these may have been outdone, if we are to accept literally the statement that from 31 August to 32 November,
1271 1271, the rain was <u>continuous</u>.[2] Obviously, however, this can only be taken in a general sense, as, also, the statement that there was a 'continual' rainfall during February and
1276/7 March, 1276/7.[3] In this case the land was waterlogged, and,
1277 after another downpour on 21 April, the floods were renewed and many mills and other property swept away.[4]

As so often in the past, the brevity of references in the thirteenth century is very tantalizing. It is impossible not to speculate on what really happened, when an annalist thinks it necessary to record a 'tremendous' rain on 1 January,
1280/1 1280/1, and yet gives no details.[5] That he entered the fact must mean that it was excessive and left a great impression on his mind, and must have caused serious floods. In this particular case, at any rate, the waters were soon sealed by a frost which lasted fifty days. In another instance, on
1288 20 July, 1288,[6] 'there was such reyne'etc 'that it destroyed all the corn', but as to 'how' or 'where', we are left uncertain. There is something slightly more definite about
1289 the period 29 September, 1289, and 2 February, 1289/90. The

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1. Ibid.
2. A.M. Wig.
3. A.M. Win.
4. Ibid.
5. A.M. Os.
6. Capgrave C.

289/90 time was remarkable for no frost at all, 'nor was any snow seen'; but, on the other hand, there was constant rain, 'day and night', and hardly a ray of sunshine as the land was continually over-clouded. And then, by one of those freaks of our climate, there was hardly a drop of rain for six weeks.[1]
1291 The autumn of 1291, however, brought with it the usual floods, which, about 25 November, were particularly bad in and around Worcester. These seem to have been repeated in October,
1292 1292; and in April and May, 1293.[2] England was going through
1293 a wet period, and incredible though it appears, there is said
1294 to have been almost continual rain from 29 August, 1294 to 25
1295 March, 1295.[3] It is to be hoped that when the weary knights and burgesses met in London on 27 November, for the first sitting of the model Parliament, they had not had to struggle through more than the usual rainfall of the season.

The weather of the years 1314-6, closely resembles that of 1256-8; it was a period of grinding and alarming famine.
1314 The 'great rains' started in the 'harvest time' of 1314, and
1315 caused 'scarcity'[4] During most of the next summer there was incessant rain, and when the autumn came the crops were found
1316 to be diseased and yielded no nourishment.[5] The spring of 1316 began with wide-spread floods in all parts, and the autumn was, if possible, worse than that of the previous year. The

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1. A.M.Os.
2. A.M. Wig.
3. Ibid.
4. Capgrave C.
5. W.H.R.C.

crops were lost and famine stalked the land.[1] The colossal price of wheat proves its scarcity: it is said to have reached £4 per quarter. Live stock had also been seriously affected, and there was a meat shortage, which, so it was whispered, had led to cannibalism in some places.[2]

After such experiences, those who survived these awful years, must have viewed with the greatest apprehension the
1335 spring of 1335, which was attended with such excessive rains that a universal dearth ensued, owing to the corn rotting on the ground. Whether previous lessons had been learnt, or whether England had a monarch of more foresight and greater strength of will, than had been the case in 1314-6, it is difficult to say; at least, in this case steps were taken, as far as London was concerned, to combat the approaching starvation. Provisions had become so scarce in the City that Edward III sent a severe reprimand to the mayor and sheriffs for not having greater regard for the welfare of the citizens by taking the necessary steps to prevent a lack of supplies. It is a little difficult to see what they should or could have done, but a reprimand from a man like Edward III, doubtless, had a very awakening effect upon the authorities of the City.[3]

The comparative ease or increased difficulty and hardship of travel from end to end of the kingdom has ever been in the hands of the goddess of the weather. An instance of how

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1. A.M. Os.
2. Thornton.
3. Ibid.

weather reacted upon political history and upon the lives of
1339 Englishmen, is furnished in the year 1339. The opening of the Parliament, which had been called for that year, was adjourned by Edward III to give reasonable time for the arrival of members from the more distant localities, who, owing to the bad storms, had been delayed on the way.[1] That this was only just is proved by the fact, in those uncomfortable days, that many bridges, including that of Newcastle-upon-Tyne, had been swept away.[2]

It is difficult to imagine that Englishmen, as a race,
1348-9 could ever have been unhappier than in the years 1348, and 1349, when the Black Death swept from end to end of the kingdom, carrying away thousands. In addition, if not to human sorrow, at least to general discomfort, the year 1348, was an excessively rainy year and proved very disastrous to live-stock,[3] particularly between 24 June and 25 December.[4] Nor do the narratives of the next few years grow any less terrible to read, but it is the burden of the plague that fill the sheets rather than any records of rain storms. That there were the latter goes without saying, as, for example, a downpour in the Cumber-
1360 land hills in 1360, which caused sufficient flood to sweep away the bridge at Salkeld,[5] but, public and political, private and domestic, annals are wiped out in the 'moan' that came from all sides of the bereavements particularly during 1348-9,

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1. J.W.G.
2. E.J.
3. Hist. M. SS. 5th Rep. p. 446
4. Capgrave C. cf. Ch. St P.
5. E.J.

1350-1 and 1361. A combination of miseries seem to have
1369 accumulated in 1369. The vileness of the weather joined with the loathesomeness of the plague harried the remnant of the people who were burdened enough by the toll exacted by the Wars in France. In London, it is said, 'a great Plague .... swept away abundance of people';[1] but, probably, as many died from starvation, for there was a very wet harvest, and corn was sold at £1 - 4 - 0[2] or £1 - 6 - 0, per quarter.[3] It is to be remembered that, at this time, England normally produced such quantities of corn that, with a very small population, there was generally a surplus for export. When bad years came, however, this was economically impossible. Such was the
1389 case in 1389. It is clear that, after the rains and floods of that autumn, those in authority were wise, in October, to prohibit the export of wheat as all the crops that had been saved were required to meet home demands.[4]

The early days of the reign of Henry IV were full of difficulties, constitutional and political, without any of those that might be added by the peculiarities of the English climate.
1400 These, however, also obtruded themselves. The year 1400 must have been excessively rainy, and, certainly, notorious for floods for the old bridge at Durham was destroyed[5]; and there was,
1403 in 1403, a collection 'in aid of the construction of a stone-

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1. Maitland.
2. Ibid.
3. Thornton.
4. Cal. Close R.
5. E.J.

-bridge' over the Ribble, at Preston, to take the place of the one 'which had been broken by floods and ice',[1] three years before. It was not only such losses as these that darkened the reign, but in the Welsh war with Owen Glendower, the English troops suffered greatly from rain and wind. Nor did they feel reassured or any more comfortable, when the report was generally spread amongst them that these climatic phenomena were due to the magical devices of Owen, or, as some said, to the necromancy of the Minorite Friars.[2] In an age completely ignorant of the elements of meteorology such beliefs were easily swallowed. Nor had the people any technical knowledge of methods for regulating the flow of rivers or of preventing bridge-disasters. The Thames was a most regular offender.
1412 According to one authority, in 1412, there was 'a gret excessive flode in the Temse'.[3] This may have been a distinct flood from that of the next year or, it is possible, that it was the same as that mentioned by the somewhat unreliable Capgrave
1413 for 1413.[4]

1427 'This yere (1427) was unseasonable of wederynge for it reyened moste contynually from Ester to Myghelmasse where through hay and corne was greatly hyndered'.[5] And so starvation stared the Englishman once again in the face. Perhaps, in those days, he was accustomed to tighten his belt and carry
1438-9 on. He had to do so once more, in either 1438[6] or in

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1. Cal. Pat. R.
2. A.H. IV.
3. G.F.L.C.
4. Capgrave Hist. of T.H.
5. Fabyan's C.
6. W.H.R.C.

1439[1], (it is a little uncertain), when during the harvest, 'there were such excessive storms of wind and rain that a great part of the crops were destroyed so that the poor .... were reduced to the necessity of making a kind of bread from ivy-berries and fern-roots'[2] At last the Lord Mayor was able to negotiate an import of corn from Prussia;[3] but after all, this was only for the citizens of London, and starvation confronted the whole of the rest of England. The flood trouble was re-
1447 newed in 1447, when, on 10 April, 'the watter of the Temse by excesse of floode, the Monday in Ester weke, came out and incresid on the londes unto Populer and drownyd many howsys and feldes and medowes and moche of the parish of Stepney and at Raynham, and other places in Essex'.[4] Having surmounted this disaster, the Londoners were destined to be overwhelmed again,
1450 on 9 October, 1450, with 'such a wellyng and spring of waters both of the see water and the ffresh Ryvers and other springs that the lowe contre in divers places wer overflowe[5]'.

The combatants in the Wars of the Roses learnt something of the power of the weather at the Battle of Northampton, on
1460 10 July, 1460, when the Royalist artillery was rendered useless by the torrents of rain and the flooded state of the meadows.[6] Certainly Warwick's troops had a gruesome time marching to
1460/1 Chipping Norton in February, 1460/1, a month, 'long remembered

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1. Thornton.
2. Young bracken shoots were suggested as food 1914-8.
3. Thornton.
4. G.F.L.C.
5. Baber's C.
6. Sir J R. L. & Y.

for its rains and inundations'.[1] In Yorkshire the spring was
1461 very wet, and by 27 March, 1461, the Aire was 'swollen to a formidable torrent and likely to cause much trouble' to any armed force desirous of making a crossing. The next day was very wet,[2] and then followed the clash of arms between York and Lancaster, at the battle of Towton; it was not rain, however, but snow that was the deciding factor in favour of York,[3] on the 29th.

There is, probably, only one instance in English history where rain and flood have been the chief causes of the failure of a formidable rising against the acknowledged king. This, however, was the case with regard to the insurrection of the Duke of Buckingham against Richard III, which was timed to
1484 break out on 18 October, 1484.[4] Had it done so a few days earlier it might have ended very differently. 'The duke had taken arms at Brecon, and had collected some thousands of Welsh and Marchmen, but as he moved towards the Severn to join his friends he was foiled by ten days continuous rain'.[5] The Severn was soon in a terrible state of flood, such as 'to carry away men, women and children'. It came to be called, 'the Duke of Buckingham's Water' for it made it quite impossible for his force to cross. His men for want of provisions and lack of pay began to desert him, and it may be asserted that this

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1. Oman.
2. Ibid.
3. <u>vide</u> Ch. I.
4. Longmans Hist. Eng. IV.
5. Green.

deluge seated Richard III more firmly on his usurped throne.[1]

No similar flood seems to have been recorded until the
1499-1500 winter of 1499 and the spring of 1500. In the November
there were 'grete floddes .... in dyvers placys .... in
Ynglonde'[2], and early in the next year serious floods at Oxford.[3]
1527 But these were entirely surpassed by the events of 1527,
which was a year preeminent for rain. It is stated that it
rained every day or night from 12 April to 3 June;[4] and on 6
October, there was 'a gret reyne all the nyght and all the
day unto vj a cloke at nyghte'.[5] The weather seriously
affected the harvest and corn became very scarce, and there
was something approximating to a famine, 'many of the lower
sort of inhabitants in the city (of London) perished through
mere want. This dreadful calamity was soon stopped by the
interposition of his majesty and the company of (H)Anseatic
merchants, the former supplying the city with one thousand
quarters, and the latter importing large quantities from
Dantzick'.[6] Again we hear only of the Londoners, but the
starvation must have been national. What of the poor peasant in the outlying parts of the kingdom ?

1540 About 1540 there was a dry spell, but this did not con-
1543 tinue, for in 1543 there was a 'wett sommer' followed by
1545 'high flouds'[6a] and in 1545 there was rain and thunder.[7]

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1. Ibid.
2. G.F.L.C.
3. J.J.M.
4. Holinshed C.
5. G.F.L.C.
6. Thornton.
6a. W.C.
7. G.F.L.C.

1548 Although 1548 stands out 'as a droughte for lack of rain';[1]
1549 it was certainly no drought on 11 August 1549 at Wark, Northumberland, when after heavy rains the waters had so risen that 'the carriers horses ... could not by boat or otherwise be got
1553 over without loss';[1a] nor, on 8 December, 1553, when 'my lord (bishop) of London' commanded 'that every parryche chyrche shuld provyd for a crosse and a stagge and cope for to go of progress you evere Sonday and Wedynesday and Fryday, and pray unto God for fayre wether thrug London'.[2] Matters had evidently reached a desperate pass. Nor do they seem to have
1554 improved on Monday, 23 July, 1554 when Philip II started from Southampton, where he had landed a few days before, to go to make his first visit to Queen Mary, who was then at Windsor. Mr. David Loth says 'Accompanied by about three hundred men, mostly dispirited Spaniards, he set out soon after it was light. The rain was coming down harder than ever, and the Prince was hardly dressed for the English climate. He wore a diamond-embroidered black velvet surcoat over white trunks and doublet for which his red cloak was not sufficient protection. By the time he was nearing Winchester in the late afternoon he was drenched to the skin and stopped to change his clothes. The new suit, of black and white velvet, adorned with gold bugles, was ruined in the remaining mile of that wet ride, which ended at the Cathedral, where his Spanish

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1. W.C.
1a. Hist. MS. Coms. 24. I.
2. Machyn's D.

entourage was surprised to find mass "as solemnly sung as at Toledo". Philip, going from his devotions to the Dean's house, which had been prepared for his lodgings, again insulted all his countrymen by accepting, with a smile and a word of thanks, the cloak an Englishman offered him.'[1] The summer and early autumn of the next year seem to have been very un-
1555 pleasant and on 30 September, 1555, when by occasion of 'the rain that had fallen was such great floods that the King's Palace at Westminster and Westminster Hall was overflown with water'.[2]

1559 There was rain on 5 September, 1559, and the autumn was
1560 stormy. It 'raynd varie sore' on 16 April, 1560; and there
1561 was 'a grett rayne tyll mydnyght' on 30 July, 1561, and another
1563 downpour on 29 May, 1563.[3] Meteorological information for the
1564 winter of 1564 and spring of the next year is mainly confined to the great frost; but there is one reference to severe inundations after the thaw, almost certainly accompanied by rain, on 3 January, which 'bore downe bridges and houses and drowned manie people in England, especially in Yorkshire. Owes (Ouse) Bridge (i.e. at York) was borne awaie with others'.[4]
1566 Floods were very common in most parts in the spring of 1566. The spring of 1568/9 was wet, and the bad weather prevented Mary, Queen of Scots at Tutbury taking outdoor exercise,

1. David Loth, Philip II of Spain.
2. Holinshed C.
3. Machyn's D.
4. Holinshed C.

and so she 'wrought with needle'[1], and plotted with the discontented nobles. When the rising of the Northern Earls did take place in 1569, one of the difficulties in suppressing
1569 it in December was due to rain. Clinton and Warwick advancing against the rebels had been much delayed for 'the roads were foul and miry', and marching in armour the troops could only move five or six miles a day. They pushed the rebels towards the border, and both parties had to contend with blinding sleet lashed into their faces by a blasting north wind. The plight of royalist and rebel alike was not pleasant, but the one had triumph to encourage him, and theother was weighed down by sore disaster.[2] Further rains and floods occurred at
1573 Towcester on 7 June, 1573,[3] at Tewkesbury on 24 February,
1574/5 1577 1574/5,[4] and in London in June 1577[5]. During the summer of
1578 1578 there was a drought and the 'first rayn that came for many a day' fell on 21 September.[6]

The main characteristic of the weather during the next fifteen years might be summarised in the one word 'wind'. With these continuous tempests there must have been many heavy rain storms, but none seem to have attracted the notice of the annalists of the period. The wretchedness of the summer of
1594 1594, however, not only impressed contemporary historians but was notified by the greatest dramatist of all time. Stow

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1. Hist. S. Com. 9 I.
2. French Hist. of Engl. IX.
3. Stow. A.
4. Holinshed C.
5. Dr. J.D.
6. Ibid.

writes on 11 April, ' a rain continued very sore, more than 24 houres long, and withall such a wind as pearced the walls of houses were they never so strong'.[1] Some writers say that this unusually wet summer did not begin until 1 May[2]; but it is a small matter, at least, it was a year of outstanding wetness, forcing up the price of wheat to £3 - 4.s.0d. per quarter; and above all its general unpleasantness laid hold of the imagination of Shakespeare, and he wrote:

'The ox hath therefore stretch'd his yoke in vain,
The ploughman lost his sweat; and the green corn
Hath rotted ere his youth attain'd abeard:
The fold stands empty in the drowned field,
And crows are fatted with the murrian flock

....

That rheumatic diseases do abound:
And thorough this distemperature we see
The seasons alter: hoary headed frosts
Fall in the lap of the crimson rose;
And in old Hiem's thin and icy crown,
An odorous chaplet of sweet summer buds
Is, as in mockery set. The spring, the summer,
The chiding autumn, angry winter, change
Their wonted liveries; and the mazed world,
By their increase, now knows not which is which.'[3.]

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1. Stow A.
2. Thornton.
3. A Midsummer Night's Dream. Ac, II. Sc. 1.

The Rain continued well into the Autumn, and Sir Thomas Tresame wrote 'This present weeping All Souls day (which exceeded all the extreme wet days of this long matchless wettest season)'[1] If, however, everyone has realized the unseasonableness of
1596 1594, some have forgotten that 1596 was a year of equally deplorable bad weather and scarcity. Owing to almost perpetual rain, there was, what practically amounted to, a medieval famine; and wheat sold in London for the unprecedented figure of £5 - 5s. - 0d. per quarter, while rye was as much
1596/7 as £3 - 12s. - 0d.[2] On 5 January, 1596/7 a correspondent writing from London says 'the rain lasts day and night and the country is water-logged. The roads are in such a state that it is impossible to travel by carriage or on horseback.'[3]

The seventeenth century opened with little or no improve-
1600/1 ment. On Sunday, 22 February, 1600/1 Lady Margaret Hoby writes at Hackness, Yorkshire, 'this day was raine so that I could not durst goe abroad but exersised in the house'.[4] The floods
1601 of June, 1601, had disastrous results in many parts.[5] When
1602/3 Queen Elizabeth died on 24 March, 1602/3 the night was described as 'very dark and rainy',[6] A further insight into
1605 the unpleasantness of the period is shown on 30 October, 1605 when Mary Coke writes from Preston to John Coke thanking him

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1. Hist. MSS. Com. 55.
2. Thornton.
3. F.N.L.
4. M.H.B.
5. T.P.
6. Hist. MSS. Com. 55.

for sending her a gown, and says 'but considering our foul and dirty weather, though my walks be very few, I am loath to carry so much gold at my skirt into the dirt about the house which maketh me wear my gown seldomer than I would do'.[1]

1609 After vicissitudes of drought and frost in 1609, the inhabitants of this country were faced, once again, with the food problem, as in August, owing to continued wet weather the corn lay rotting in the fields.[2] A diarist writes, 'Extreme wet causeth the price of all kinds of corn to be somewhat high - although great plenty - the like seldom seen - .... which by reason of much wet weather was much hurt. All kind of corn did grow in stook, and much cast away and spoiled. I myself was forced to turn oats some four and some five times, before I could save it'.[3] And yet, Travelyan, in Devonshire, can say on 1 September, 'this busy but happy time of harvest'.[4]

1614/5 The frost of 1614/5 broke some time after 10 March, with the result, for there had been heavy snow, the thaw brought serious floods. Rawtheybridge was 'utterly ruinated and carried away by ye greatnesse of ye floods .... and 40 persons have, within a small space, beene ther drowned';[5] and, at the same time, the floods are mentioned as being particularly bad in and around Helmsley.[6]

1615 The year that followed was one

1616 of astounding drought, but not so from 30 November, 1616,

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1. Ibid. 25. I.
2. F.P.W.
3. W.Y.D.
4. T.P.
5. Quoted by E.J.
6. Ibid.

to 2 February, 1616/7, for 'this year were extreme rains .... and scarce any one day fair in all that time'[1]; and at Manchester the floods were excessively boisterous and destructive.[2] And yet, somewhat curiously, the 'corn proved this year to be very good generally'.[3] Unpleasant days are recorded in the next two years. At Whalley, Lancashire, on 2 January,
1617/8 1617/8, 'it was a foule rainy day'; and on the Yorkshire and
1618 Lancashire border, on 11 June, it was rainy and the diarist was 'wet through', but then he deserved to be, because he was trying for a fox at that extraordinary season. At Sladeburn, on 3 July, 'it rayned' with bad results for the narrator, once again, as he 'stayed and tipled most of the day'. That year the hay harvest was very late, not being carried before 22
1619 August, and the 28th., was a 'rainy day'. In the following year the same writer tells how he rode from Coventry to Daventry on 7 November, and that he found it, 'a verie foule raynie and stormie day.'[4]

1621 The summer of 1621, after a frosty May, became wet and cold. The corn was much 'laid' and 'like to prove ill', and what little there was of it was not harvested until 'Allhallowtide'.[5]
1622, 1623 Nor do the harvests of 1622 and 1623, seem to have been any better,[6] so that these two scarcity years, 'caused a famine in the northern shires, and many were forced to live on boiled nettles, or to eat swine, sheep and horses that had died by

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1. W.Y.D.
2. H.N.D.
3. W.Y.D.
4. N.A.J.
5. W.Y.D.
6. Wither.

1625 chance'.[1] Better times followed until, 12 June, 1625, when 'ceaseless' rain fell for a month,[2] to the renewed detriment of the crops, and constrained a contemporary to lament that 'a deluge of destruction is comming upon us'.[3] This downpour continued for the first few weeks of July, and 'now men made hay standing up to the ankles in water'.[4] In addition to these crop-losses the abnormal floods had soured the best meadows and bad pastures had caused the spread of sheep-rot.[5] Once again the perils of famine threatened the country, but after
1626 a wet spring in 1626, the sky cleared.[6] The summer, however, particularly June and July, 'fell out to be extreme wet and unseasonable, so that for six weeks space ... we had not one day together without rain. Much hay was spoilt and rotten on the ground because men forbore to cut it, doubting to save it. Corn much beaten down'.[7] Young was possibly mistaken about the corn harvest, for matters improved in August, and it was said of this year:

'And Harvest came which fild our Granards more
Then is the fruitfull'st of sev'n yeares before'[8]

1628 The spring and summer 'even untill mid July', of 1628, were 'wondrous could and wette with many frostes'. These things had to be accepted with patience and philosophy, and so, 'by reason of the wett' the frosts'did little hurt'.[9] Not so,

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1. Ibid.
2. Col. S.P. Ven. 1625. 6
3. S. Bradwell.
4. S.P. Dom. ch. I. doc. 61. vol. IV.
5. Ibid. doc. 44. vol. VIII.
6. F.P.W.
7. W.Y.D.
8. Wither.
9. J.R.D.

however, with the frost on 10 June, in the neighbourhood of
Nantwich, for it did much damage 'to fruite and corne, espec-
ially to rye in lowe valleys';[1] and the autumn did not improve
matters for 'this Michaelmas time, before and after, hath fallen
wonderfull store of raine, so that fences be drowned fiering
and stovers (estovers) loste .... corne riseth in price'.[2]

1632 1633 A brief series of hot years started in 1632 with the
1635 exception of a wet August in 1633,[3] and in 1635, from March to
1636 July, 'there was no rain at all',[3a] in Cheshire. The year, 1636,
was 'very dry'[4]; but on 5 November, there must have been a
change as there was a flood on the river Weever.[5] The spring
1638/9 of 1638/9, was wet with floods in the West Riding;[6] but the
period of harvest was hot, and October, was mainly fine.[7]
The warm years, however, had passed and the early months of
1639/40 1639/40 were bitterly cold.[8] After the snows, and the rains
1640 that followed the thaw, on 8 April, 1640, there was a 'sudden
overflowing of the Weland to an incredible Height. On the
Southern Bank of that River in St Martin's - Stamford, is the
mark how high it rose which is Five Foot Eight Inches above
the ground. This was called the Easter Flood.[9] At the same
time was a great and sudden an Overflowing of the River Nyne
(Nene). 'Tis noted in great Addington Register that in 1640

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1. Reg. Nantwich.
2. J.R.D.
3. Hist. MSS. Com. 45. I. 3a. Hall.
4. J.E.D.
5. Hall.
6. West R. Sess. Rolls.
7. Lady Brilliana Harvey.
8. *Nature*, 1930
9. W. Harrod, Antiquities of Stamford, gives the year as 1641.

April 8, Wednesday in Easter-week, was the greatest and suddenest Flood, that ever had been. It overflowed the lower Rooms of the Houses on both sides of Bridge Street in Peterborough. The Rains that occasion'd it, were all, I am credibly inform'd, above in the Upper Part of the County'[1]. Ralph Joscelin tells much the same story, saying, 'coming home to preach at Oln(e)y fayr, floudes were so great as I narrowly escaped drowning in divers places.'[2]

Rain played its part in the history of the "Great Rebel-
1642 lion." On 15 July, 1642, when Lord Strange (later Earl of Derby) was attacked at Manchester, he was fired upon, by order of a certain Captain Breck, 'but the rain being so great, put out most of their matches',[3] and so rain saved an important life for the cause of the King. Rain was not however, always favourable to the royalists, as when, it stopped the training of the undergraduate forces in the Parks at Oxford on 20 August 'it beinge somethinge unseasonable wet';[4] or again when it accompanied the tempest that blew down the King's standard at Nottingham on 22 August.[5] It rained during the siege of Manchester in September, just when it was 'harvest time', and 'our corn, the livelyhood and subsistence of our familie is in the feild ripe', and noone to gather it in.[6] Queen Henrietta Maria arrived from abroad on 22 February,

1. Morton.
2. R.J.D.
3. C.W.T.L.
4. A.W.
5. V.M.
6. C.W.T.L.

1642/3 1642/3, in stormy and rainy weather, and that night had to find shelter under a hedge at Bridlington,[1] from the disloyal and discourteous guns of the revolted ships. Throughout that same month of February the siege of Preston was conducted during continual rain storms, but 'as soon as matters were settled .... the sun brake forth and shined brightly and hot .... as if it had been midsummer'.[2] It also rained during the siege of Bolton, but on 16 February, 'the weeping heavens changed their chear for our encouragement'.[3] The Newbury campaign was attended by the discomforts associated with rain. The Earl of Essex and his army on the night before the first

1643 battle of Newbury, Wednesday, 20 September, 1643, had had to march in a drenching downpour from Cirencester, through muddy lanes without adequate food; nor were they much happier after the battle, for the evening 'was very damp and chill'[4]. That autumn the weather continued unpropitious as William Waller found between 6 - 15 November, when besieging Basing House. The siege took place in bitterly cold and foggy weather, Waller failed in his attempt and in drenching rain the disheartened Parliamentarians withdrew.[5]

Rain proved an ally to the besieged in Lathom House in May, 1644, 'about this tyme were discovered a cessation in their myne work, the abundance of rayne soe slackinge and

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1. V.M.
2. C.W.T.L.
3. Ibid.
4. W.M.
5. D.H.M.R.

looseing the earth about their trench all fell in, with the death of 3 of theire myners'.[1] On the 25th., Rupert on his way to Marston Moor reached Stopford on the confines of Lancashire after having experienced very bad roads and weather; and three days later in his attack at Bolton, was delayed because 'the rayne was so immoderate'.[2] In the late August of that year the campaign in Cornwall, which ended at Lost-withiel, was conducted in 'blustering' or 'wett' or'very misty' weather; and on Monday, 2 September 'it rayned extremely as the varlets (defeated troops of the Earl of Essex) marched away'[3]. It was also very wet in the neighbourhood of Reading in October.[4] The damp continued into the next year and on

1644/5 29 January 1644/5 Major General Langharne wrote to William Lenthall from Camarthen, 'wind and weather proving unfavourable for conveyance of my guns much delayed my designs upon Aberys(t)with Castle'.[5] William Waller also complains on 13 March of toiling along with his troops, near Amesbury, through 'the worst ways and basest weather that ever I saw'.[6] Ralph Joscelin gives a most melancholy account of the autumn

1646 of 1646. On 15 September he writes 'A merveylous wett season, winter coming on very early; a great hop yeare, wheat this yeare was exceedingly smitten'. 'Very much raine fell' at Chelmsford on 7 October; and on the 11th., he says 'This

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1. C.W.T.L.
2. Carte MSS.
3. R.S.D.
4. Hist. MSS. Com. 29 I.
5. Hist. M.SS. Com. 29
6. L.M. App.

weeke the weather continued very wett and sad in respect of ye season'. On the 24th., he again complains 'a wonderful sad wett season, much corne in many places abroad, rotted & spoyled by cattle through the wett .... great divisions & feares of our utter ruine'. Nor does the first day of November bring any relief. 'This weeke the wettness of the season continued with litle or no intermission & so it had continued for above two months'. At last on the 12th., he is able to record 'a frost and pleasant day'.[1]

1647 The April of 1647, was very wet in Yorkshire; on the 20th., 'it rayned faste and this morne allso which made a very great flood'; and on the 23rd., 'was much rayne which raysed the waters'.[2] The following summer was equally disagreeable for those who took part in the military operations. Captain Samuel Birch writing on Sunday, 25 June, 1648, says ' wee marcht towards Carlisle to Heskett Moore .... and then march't to Warwick Bridge, an extreamity of wet and foul wether.... a miserable time for the souldiers as I have seene at any time'. This wretched state of affairs continued into the next month, and on 8.9 July, he says 'We march't .... to Penrith, much rayne hath beene. Such a wet time this time of the yeare hath not beene seene in the memory of man'.[3] The summer continued the same and Major General Lambert wrote from

1. R.J.D.
2. A.E.D.
3. Hist. MSS. Com. 29. III.

Barnard Castle to William Lenthall on 20 July, 'our horses and men being very much tried and worn out with continual dirty, hard marches and bad weather'.[1] And so to the end of August, when it is stated on the 28th., that the ten weeks siege of Colchester ended and that throughout the siege had been accompanied 'with the most excessive Rains, Floods and
1648 dismal weather'.[2] The August of 1648, was also very disagreeable in Yorkshire and Lancashire, as Cromwell and his men found to their discomfort in the campaign of Preston and Wigan. On the 20th., 'we lay that night in the field close by the enemy, being very dirty and weary, and having marched twelve miles of such ground as I never rod in all my life, the day being very wet'.[3] In fact, the whole of 1648, 'was a most exceeding wet year, neither frost nor snow all the winter for more than six days in all. Cattle died everywhere of a murrain'.[4] It is
1649 clear that a period of scarcity followed, for on 6 April, 1649, oats were £4 a bushell, and wheat £2 - 13s - 4d.[5] The dearth
1650 of corn continued into 1650, which was again a wet year. Prices remained very high,[6] the hay harvest was delayed in Oxfordshire,[7] and in the early autumn the corn crops were ruined by steady rain.[8] By November, the perpetual downpours led to floods, and

1. Ibid.
2. England's Black Tribunal.
3. O.C.L. LXIV.
4. J.E.D.
5. L.G.L.C.
6. Thornton.
7. Rev. H. Barrett.
8. H.N.A. cf. R.J.D.

on the 17th., the central arch of Newcastle Bridge was swept away with eight houses, one of which built of wood was carried seven or eight miles.[1]

The historic flight of Charles II from Worcester on 3
1651 September, 1651, was difficult and dangerous enough, and was made more so by the weather. On the 4th., 'it was raining. All day the king crouched in the damp undergrowth of a little wood' at the Penderels. At last he managed to slip away, but was obliged to return to Boscobel on the 5th. To do so he intended to ford the river at Evelith Mill, but 'the heavy rain had swollen the little stream'. His companion, not being able to swim, hung back, but the King being a good swimmer promised that he would see him safely across, and so they plunged in, and found that, after all, they could wade. When once again Charles left Boscobel for Moseley on the 7th., the night was pitch dark and very stormy, but he managed to reach his destination.[2]

1655 The harvest season of 1655 was ruined by rain, throughout the country, as records both in Yorkshire and in Devonshire testify. In August, at Howden, there was heavy rain 'where in some places the water .... swept away much Hay, some Corne, and other Hay corrupted by the unseasonable season (the like scarce memorable).'[3] Trevelyan writes, on 17 October, from Devon,
1657 'we have had a very unseasonable harvest'.[4] Possibly 1657, was

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1. E.J.
2. A.B.
3. Reg. Howden.
4. T.P. cf. Hist. MSS. Com. 29 III.

even more disastrous. On 10 April, the village of Langtoft in Yorkshire, encircled in hills, was flooded to the depth of eight feel as shown by a memorial stone placed in one of the houses.[1] Evelyn records that on 21 April, there 'fell a most prodigious rain in London, and the year was very sickly in the country'.[2] Newcome writes on 24 October, of windy and 'blustery' weather.[3] The following February and April, were wet in Cambridge.[4] There were gales and rain in London on 2 June and
1658 18 August, 1658,[5] and, in Oxford, very wild weather on 30 August.[6] Tradition says that on the day of Cromwell's death, 3 September, there was a tempest, but Anthony Wood denies this.[7] In the north there was much rain and on Sunday, 17 October, there were severe floods at Preston.[8]

1659 The summer of 1659, in the northwest had some bad days as experienced by the forces of General Lambert on Thursday, 18 August, when advancing towards Chester, 'it proved very unseasonable for Rain'. This, however, did not prevent the defeat of the royalists under Sir George Booth.[9] After a cold
1659/60 and frosty January, the month of February, 1659/60, was wet. It was such a downpour on Sunday the 19th., that Pepys says 'my <u>wife gets my Mother's French mantle and my brother John's hat'</u>;[10]

1. <u>Nature</u> 1930. <u>cf</u>. 1888. 1892.
2. J.E.D.
3. H.N.A.
4. J.W.D. & C.
5. J.E.D.
6. A.W.
7. <u>Ibid</u>. <u>cf</u>. ch. VI.
8. H.N.A. <u>cf</u>. R.J.D.
9. C.W.T.C. <u>cf</u>. R.J.D.
10. S.P.D.

and from numerous other references there seems to have been quantities of rain culminating, on 20 March, when he writes 'to Westminster, when by reason of rain and an easterly wind the water was so high that there were boats rowed in King Street and all our yard was drowned, that one could not go to my house, so as no man has seen the like, almost all houses full of water.'[1]
1660 During the middle of April, 'it rained much' in London; but May was, on the whole, fine, especially the 1st., and the 24th.[2] It was very wet in Cambridge on Thursday, 5 July, so that Newcome could not start his travels,[3] and during his journey on the 16th., it rained near Adwalton, 'but after proved a fine day, which was a great mercy to us'.[4] In London, on that day, it was 'very rainy weather'.[5] and after that, until 1 November, Pepys has frequent entries concerning rain.[6] Nor are his references to the December weather much more cheerful. On the 8th., there was lightning and thunder; on the 11th., 'the weather was very bad'; and on the 16th. 'it rained hard'.[7]

Our ancestors must have learnt to put up with mere rain, but it is difficult to imagine how they bore all the discomforts and damage of flood. What, for example, did the inhab-
1661 itants of Oxford think of the year, 1661, which was one of particularly bad floods ? Wood remarks 'Three flouds this

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1. Ibid.
2. Ibid.
3. H.N.A.
4. Ibid.
5. S.P.D.
6. Ibid.
7. Ibid.

yeare: one a little after Christmas, another in March, toward the latter end, and in April, and another in May which continued till the middle of June. Grass and hay spoyled and a deare yeare'.[1] Wood was speaking of Oxford only, but there were floods in all parts. January had been unusually mild, so that the floods were not due to a thaw and melting snow, but to rain, as Pepys remarks, on 6 March, 'much rain has fallen lately and the waters' are 'very high'.[2] On Easter Sunday, 14 April, 'it rained all night' and Easter Monday was 'a very foul morning'.[3] The coronation of Charles II on the 22nd., was not improved by frequent showers, and 'the vast gaping crowds in the streets were frequently wetted'.[4] On WhitSunday, 2 June, 'it rained very hard as it hath done of late so much that we began to doubt a famine'; on the 12th., there was a fast because of the 'late immoderate rain and waters', though, apparently on the same day, there was a thanksgiving 'for the blessed change of weather'. It rained hard at the end of August; the roads were 'all dirty and washy' at the end of September; and November began by 'being very rainy'.[5] In the north of England it was much the same. On Saturday, 9 November, Newcome writes, 'I should have gone (from Manchester) to Durham today .... but I went not bec. of ye flood'.[6] And he

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1. A.W.
2. S.P.D.
3. Ibid.
4. A.B.
5. S.P.D.
6. H.N.D.

records on the 15th., that at Manchester, 'It was a great and mighty flood this day and night.'[1] In London during December there was a mixture of frosts and rain;[2] and on Christmas Eve, in Manchester, Newcome writes of 'ye sad weather'.[3] The diarists paint no pictures. What must have been the misery and filth that followed these floods, in cottages near streams? Even today such inundations destroy the cherished bits of furniture and the treasures of the family, leaving behind a residue of stinking slime and mud. What must it have been in the seventeenth century without drainage and without the modern fireplaces to dry the articles left sodden after the torrent had passed ?

The unseasonable weather of the previous year continued
1661/2 into 1661/2. In London there were special services on 15 January,[4] and Evelyn says that there was 'a fast to avert God's judgement on the land. Great rain had fallen without any frost or seasonable cold'.[5] For three days after the fast there was 'frost & faire weather'[6]; but this was very temporary, and on the 22nd., there was another fast 'for ye sad weather'.[7] Despite this, on Thursday, the 30th., at Manchester, 'The L^d. poured raine down on us all day and ye flood was wonderful. Mr. Hartley escaped narrowly, ye mill-bridge goeinge downe within a quarter of an houre after he came over it'.[8]

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1. H.N.A.
2. S.P.D.
3. H.N.D.
4. S.P.D.
5. J.E.D.
6. H.N.D.
7. Ibid.
8. Ibid.

This was said to be the greatest flood since 1616. 'It was a day that will be remembered at Manchester. But sad was the ruins in Bridges & Wairs that the flood made'.[1] The next day was a cold rainy morneinge at Stockport',[2] and this kind of weather continued until, and including, the 'windy Tuesday, on 18 February, when at Manchester there was 'a dreadful storme of wind & raine'.[3] In London there was more wind than rain,[4] and in Hereford there was 'a most violent storm of rain mixt with lightning'.[5] Even after the tempest the weather did not

1662 improve, and on the 21st. Newcome had 'a very wet day of it goeinge & cominge' to Stockport. April brought better things though it had its showers. Newcome had 'a very sad dash of raine cominge over ye hills (from Holden to Manchester) & yet the L-d gave us a very sweet later end of ye day'.[6] The beginning of Nevember was unsatisfactory and the 12th., was 'a snowy bitter rainy morning'.[7] On Saturday, the 15th., it was 'sad' and 'rainy';[8] and on the 25th., at Dover the weather was 'very rainy'.[9] On 2 December, Sir Edward Harley wrote to Lady Harley, 'It was a saying of my father's, "Husbands make the almanachs, but wives the fair weather". Your letters warm and revive me though it rain and freeze'.[10] The conclusion

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1. Ibid.
2. Ibid.
3. Ibid.
4. S.P.D.
5. K.I.
6. H.N.D.
7. R.J.D.
8. H.N.D.
9. Hist. MS. Com. 29. III.
10. Ibid.

of the year was very superior to its beginning. And there was great improvement when keen frosty weather set in, which continued for some weeks and helped to dry the land.

1662/3 The long frost began to break up in the middle of February 1662/3, and the floods were soon out again in Lancashire.[1] The beginning of March was hot, and then on the 15th., it

1663 turned wet.[2] On Thursday, 7 May, there were 'great rains in Northampton, but not a drop in Oxford, but the Cherwell swell'd to that vast height, that in Two Hours Time, not only the Meadows were over flow'd the rais'd Water Walks at Magdalen cover'd &c., but the River Isis driven back as far as Ivy-Hinksey, at least a mile from the Conflux of the Two Rivers'.[3] Wood tells very much the same story, calling it 'a prodigious flood', and adding the information 'by one of the clock it came up to the backside of Merton within 4 yards: all XtCh. Walks and Magd. Walks were drowned, and the water at Magd. Bridge levill with the Common Way, almost'.[4] Such indeed was the magnitude of this flood that the account of it was spread far and wide, and Pepys refers to it as 'extraordinary', and tells how it destroyed men, women, cattle, houses and bridges. 'Two men passing over a bridge on horseback', he writes, 'the arches before and behind them were borne away, and that left which they were upon; but, however, one of the horses fell over,

1. H.N.D.
2. S.P.D.
3. Morton.
4. A.W.

and was drowned. Stacks of faggots carried as high as a steeple and other dreadful things'.[1]

Another strange storm occurred in Oxford on Tuesday, 7 July, when the corpse of Juxon, Archbishop of Canterbury, was being brought to be buried in the city. 'When they were on this side of Wh(e)atley, it began to raine in such a vehement manner, that never, or scarse, was the like seen; the streets in Oxon were all (fl)ouded with water, noe man durst to goe forth of his lodgings. This raine began at five of the clock and held for the most part till half an hour past six. And when it had held up a little while, they came into the Towne.'[2]

It must have been a most melancholy July in London. Pepys writes of the 8th., 'raining mighty hard and so did every minute of the day after ..... I know not what will become of the corn this year, we having had but two fair days these many months![3] Day after day it went on. Pepys says on the 11th., 'raining as hard as it could pour down'. Sir Edward Harley writes from Westminster on the 11th., 'The weather here is very bad;'[4] and Joscelin enters on the next day 'The wett yet continues & almost continually from April 18th., past, now a great floud, meadows drowned again & again; very little hay in.'[5] Then, at last, the 13th., was 'a most

1. S.P.D.
2. A.W.
3. S.P.D.
4. Hist. MSS. Com. 29. III.
5. R.J.D.

pleasant and warm day'[1]; but it was Nature's little trick, and on the 16th., Evelyn writes of 'a most extaordinary wet and cold season'[2], and on Sunday, the 19th., Pepys says it was 'foul weather'[3]. In fact it was so 'foul' by this time that, on the 21st., Parliament ordered a fast 'for the present unseasonable weather', which fast or intercession seems, for the moment, to have had the desired effect, as the last few days of July were 'warmer'[4]. This did not continue, however, and on 2 August, it was again 'raining'; on the 16th., 'a great showre fell'[5]; on the 19th., in Manchester, 'it was a rainy day'[6]; and the month ended with cold 'and a very great frost ... having no summer at all'[7]. The main part of September, both in the north and the south, was fine; but the weather on 4 October in London, aroused Pepys wrath, 'my house being miserably overflooded with rayne last night, which makes me almost mad.'[8] The rest of the year was cold, wet, windy, frosty, warm and, finally, foggy. And yet some modern grumblers try to make out that the English climate has changed!

1664 The early months of 1664, seem to have been, on the whole, seasonable. There was a good deal of cold and some snow. Heavy rain fell in London, on 26 March[9]; and a great downpour

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1. S.P.D.
2. J.E.D.
3. S.P.D.
4. Ibid.
5. Ibid.
6. H.N.D.
7. S.P.D.
8. Ibid.
9. Ibid.

took place, in Oxford, on 8 April.[1] There was, on 4-6 May, a remarkable inundation of the River Nene. 'In the lower Part of the County (Northamptonshire) they had no Rain, or not so much as would make a mower put on his Coat .... The Rain that occasion'd this Flood fell at Daintry and thereabouts on May 4 .... The Flood .... broke down the Two middle Arches of the South Bridge at Northampton, and overthrew many Hundred Yards of walling, besides other Outrages. On May 5 or 6 at Peterborough, Two Men who went out thence in the monning, upon their returning homeward at night, knowing nothing at all of this impetuous and unexpected Flood, were drowned'.[2] May seems to have been a rainy month everywhere. Pepys gives several references to 'very rayny weather', or 'raining terribly'; and even in June, he writes, on the 12th., of being 'wakened by extraordinary great rain'. There was, on Sunday, the 19th., 'the greatest shower of rain', and the 26th., was 'rainy'.[3] And yet four days earlier at Oxford, Dr. Wallis records a period of long settled fair weather.[4] The year was normal after this; there was hot weather in July, and thunderstorms in August. The autumn was not unduly wet. There was a 'rainy night' on 1 September; it rained hard on the 27th., 10 October was 'rainy', while the 29th., was 'a foule rainy day from morning to night'.

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1. A.W.
2. Morton.
3. S.P.D.
4. Phil. Trans. 1716.

Rain is referred to in the evening of 15 November;[1] and the weather at Hereford on the 28th is described as 'foul'.[2] When December came frosts came with it.

1665 The spring and summer of 1665 were, on the whole, fine; first, owing to frost, and then followed what might be called a heat-wave. The autumn, however, was not good. There was rain in September,[3] and the 15th., was a 'misling day'.[4] On 9 October it was 'raining most miserably', and on the 25th., there was much rain both in London[5] and in Oxford.[6] November began with 'a very foule day for raine and a hideous wind', and the 3rd., was the same, and so onwards till the 23rd, when there was a frost,[7] which continued through December.

1665/6 Sometimes rain and sometimes frost held sway in January, 1665/6; but from 10 February, to 19 March, there was no rain.[8] After which, except for rain when there were thunderstorms the summer

1666 of 1666 was hot and fine. It was succeeded by a wet October, during which the rain is supposed to have fallen for ten days without ceasing;[9] and on the 18th., Pepys writes 'the waters so high in the roads by the late rains, that our letters came not in until today'.[10] Evelyn was so much struck with the change as to write, 'This season, after so long and extraordinary drought in August and September, as if preparatory for

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1. S.P.D.
2. Hist. M.SS. Com. 29. III.
3. N. Hodge '<u>Loimologia</u>'.
4. S.P.D.
5. <u>Ibid</u>.
6. Phil. Trans.
7. S.P.D.
8. A.W.
9. Rugge's Diwenal.
10. S.P.D.

the dreadful fire, was so very wet and rainy as many feared an ensuing famine'.[1] It was also very wet in Lancashire;[2] and in Oxfordshire there was 'great store of raine and floods not without storms'.[3] The end of the year was frosty and cold.[4]

1666/7 The frost of 1667 continued long with slight bursts of rain, as in London, on 1 February,[5] or near Southam on 21 March.[6]

1667 There was rain at Liverpool on 20 April;[7] and on Sunday, the 21st., in Oxford 'about 5 of the clock at night it began to raine and rained most of that night - wheras all the month before except on 2 day (?) noe raine fell at all'.[8] May was a delightful month, except for Friday, the 17th., when near Southwell 'it rained continuedly'.[9] Then came a hot patch, until 27 July, when in London it was 'rainy all day to our great joy.'[10] August and September, however, were very dry; but a change came on the 13th., of the latter, when 'the afternoon proved very foule weather', and on Sunday, the 15th., it rained hard.[11] In Oxford the last fortnight of September was wet.[12] For the rest of the year, there is more information as to great mists and cold than as to downpour of rain.

1667/8 The first half of January, 1667/8 was fine; on the 25th.,

1. J.E.D.
2. H.N.A.
3. A.W.
4. S.P.D.
5. Ibid.
6. H.N.A.
7. Ibid.
8. A.W.
9. H.N.A.
10. S.P.D.
11. Ibid.
12. A.W.

there was rain in London,[1] followed by a frost and then by a forward spring.[2] There was little rain in March, for Wood says, on Sunday, 5 April, 'raine fell at Oxon, none for almost 3 weeks before or a month'.[3] In London the 6th., was wet when Pepys was walking with the Duke of York in St. James' Park.
1668 He says 1 May was 'a foul day', and so was Sunday the 10th. Then the weather became hot and remained so till 30 June, when there was a combination of the two, so Pepys had to dine off 'a stinking leg of mutton the weather being very wet and hot to keep meat in'.[4] It remained hot and fine until 25 July, which was a rainy day, and then fair again. In September, it was wetter in Lancashire than in London. On 7 September Newcome writes 'The season in this county had been very wet forsometime before. And the first day (of our journey) we were wetted ill'.[5] but, he found the next day was fine at Lichfield, and 'all dust'. The end of the month was free from rain as Pepys speaks of it as 'summer weather'.[6] There was some rain in October and 'great raine' at the end of November, which led in December, at Oxford to 'great floods'.[7]

Like the previous year snow and frost held their own
1669 till the end of March, 1669. And it is not until 18 April that Pepys states that it was 'the first day of rain we have had many a day, the streets being as dusty as in the summer'.

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1. S.P.D.
2. A.W.
3. Ibid.
4. S.P.D.
5. H.N.A.
6. S.P.D.
7. A.W.

There does not seem to have been any more until 13 May, 'which lays all the dust'. A heavy shower, however, on the 30th., drove Pepys and his party home.[1] Viewed as a whole the summer must have been very fine, for on 20 September, Wood says, 'fell some raine having not rained for above a month before'. Later he adds that that rain was 'nothing'; but that which fell on 4 October, 'layd the dust'.[2] A long frost began on 17 December, which lasted into the February of the next year, though it was
1669/70 broken by a downfall of rain on 4 January, 1669/70.[3] April, in Oxford, at least, was a very wet month, and on the 18th., 'wee had a verie great flood .... which cheifly came downe Charwell'.[4]
1670/1 Referring to previous months Evelyn, wrote on 20 January, 1670/1, 'this year was so wet, stormy and unseasonable as had not been known in many years'.[5] Nor does 1671, seem to have enjoyed
1671 many bright days. It was 'soultry' in July;[6] the weather during a journey to Cambridge changed on 11 September from 'good' to 'the saddest night of rain'; and on the morrow 'it rained all day, insomuch that we could not stir out'; and Stourbridge Fair, which was then being held, was severely flooded.[7] The end of the month was no better; in Oxford the 30th., was wet, and for the first part of October there was 'great store of wet and stormes';[8] and December was 'extreame cold'.[9]

1672 The summer and autumn of 1672, in some parts of England

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1. S.P.D.
2. A.W.
3. Ibid.
4. Ibid.
5. J.E.D.
6. A.W.
7. H.N.A.
8. A.W.
9. Ibid.

were very trying to those who suffered from rheumatism, owing to rain. Amongst other places, Oxford, on Monday, 19th August, 'between the hours of 9 and 11 in the morning' had 'such great store of rain and hail .... that the like scarce hath been remembred before in the memory of man. The streets were all everflowed - sellers (cellars) drowned by Smithgate, in Groplane (Magpie Lane) and everywhere where there was a conflux of raine - the cloisters of Magd. Coll. full of water - All Soules quadrangles, hall and buttery full, the kitchen, and dripping pans at the fire carried away .... the water run like a streame through Mert. Coll. church - the water was so high in the bachelors quadrangle that all the lower chambers were drowned and the lower treasury and the seller (sic) - and .... 2 bachelors were carried from their chambers to dinner from that quadrangle upon the sexton's back'.[1] Wood then proceeds to show that this was not an isolated downpour, but that rain continued into September, 'so that in many places 'twas a verie bad harvest.'[2] He states that from 19 August to Friday, 11 October, it 'rayned every day .... a wet unseasonable automne and summer was a cause of the desease', which he calls 'an oct feaver'.[3] On 9-11 December, the rain froze as it fell,[4] both in Oxford[5] and in Somersetshire[6], and was then followed by an extraordinary period of warmth. And yet there must have been some heavy snow, or terrible rain storms, as there were

1. Ibid.
2. Ibid.
3. Ibid.
4. vide ch. I
5. A.W.
6. Nature 1930

most serious floods on the Severn on 23 December, particularly marked at Shrewsbury,[1] and at Worcester.[2]

1673 The records seem to show that the summer of 1673, bore strong resemblance to its predecessor as to rain and floods. Between 21-23 June, there was 'a great floud at Oxon. All hay and grass spoild on the low grounde. Hundreds of thousand pounds' mischief done in the nation. Not the like in the memory of man'.[3] But the greatest flood of the year was recorded in a memorandum in the Registers of Otley, Yorkshire, for 11 September. 'This summer is remarkable for the abundant and continual rain therein. On the eleventh of this month there was a wonderful inundation of waters in the northern parts. This river Whaife was never known to be so big within the memory of man, by a full yard in height, running up in a direct line to Hall-hill-well. It overturned Kettlewell Bridge, Burnsey (Burnsall) Bridge, Barden Bridge, Bolton Bridge, Ilkley Bridge and Otley Bridge, and the greater part of the water mills. It also clearly swept away Pool Dow Fulling Mills, and carried them down whole, like a ship, (they were constructed of wood). It left neither corn nor cattle'.[4]

Floods continued in the next year, and after 'a great store' of snow and rain, the waters rose very high at Oxford,

1673/4 on 17 January, 1673/4, almost as bad as in 1663.[5] In the

1. O. and B.
2. Green.
3. A.W.
4. Reg. Otley.
5. A.W.

beginning of February there were severe floods at Dove Bridge, near Uttoxeter;[1] and also at Essington where the cattle were 'rotten' and 'all the sheep are gone'.[2] On the whole, however,
1674 it was not a bad summer. On 1 May 'a cloud brake at Ratlesden in Suffolk & did much mischief'.[3] There was rain in London on the 7th., and 8th., and in Oxford there was rain for three or four hours on Sunday, 28 June; but the latter was a great change for it had not rained 'at all for 5 weeks going before'.[4] The first three weeks of September were very fine, though it rained all the 22nd., and 23rd.[5] On 1 November, 'it rained smartly: yet it pleased God to take up the rain, and the weather and the way were made tolerable'.[6] The first twenty
1674/5 days of January, 1674/5, showed no signs of 'frost, raine or snow';[7] but on Wednesday, the 20th., 'it snew', and on the 22nd., 'it rained'. Up to July the year remained rather cold and wet,[8] and John Rushworth writes on the 20th. from Doncaster to the Earl of Ogle 'yesterday I took horse at Lincoln to go to Welbeck but I had a continued rain'.[9] But according to Evelyn it was 'an exceeding dry summer and autumn';[10] and Wood writes of 'a drie autumn .... no raine to speak of till', Sunday, 12 December, and again on the next day.[11] During

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1. A. M. L.
2. Hist. MSS. Com. 29. III.
3. R.J.D.
4. A.W.
5. Ibid.
6. H.N.A.
7. A.W.
8. Ibid.
9. Hist. MSS. Com. 29 II.
10. J.E.D.
11. A.W.

1675 this year the country seems to have escaped the only too common inundations. The same may be said for 1676, for although during the autumn there was occasional rain, even as late as 8 October, Wood records that the rivers are not full'.[1]

The next year witnessed a very different state of things when every stream was in spate. A long continued frost broke

1676/7 on 3 January, 1676/7, when 'in the morninge a suddaine raine came .... and afterwards fell a great deal of raine'.[2] This caused serious floods, particularly at Darley Dale, when the Derwent, having been frozen, burst its banks from rain and melted snow.[3] After a recurrence of frost and snow well into March, wet weather again set in. April and May[4] were very rainy in Oxford and there were numerous floods.[4] In Cheshire, on 8 June, 'it rained all day and the next day following ....

1677 Cheadle brook at the Smithy was so high and continued (so) that noe body could pass drye on foote for the space of 14 houses at this end of the bridge. I did once see the arch of the bridge filled with water up to the topp that no man could see through'.[5] Later in the month in the same district, on the 25th., 'a great shower laid the wheat'.[6] In Oxford, from 4 to 13 August, there was almost continuous rain, 'and then it held up until the 22nd., when it rained again,[7] although in Worcestershire the day was fine.[8] The greater part of

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1. Ibid.
2. Ibid.
3. Reg. Darley Dale.
4. A.W.
5. L.G.L.C.
6. Ibid.
7. A.W.

8. H.N.A.

September and the first half of October were free from rain, and there was nothing exceptional, until 8 December, when again at Oxford, there was 'a great flood, by rain that hath been falling above a week'.[1] This inundation was prolonged, and was intensified, by 'verie much raine' between 4-8 January,
1677/8 1677/8, 'so that the flood is so great about Oxon that the like has not been knowne these many years'. Nor were things
1678 improved by further heavy rain on Sunday, the 20th. On 21 June in London 'there was a terrible storm of rain. This street and my lodgings and most of the houses in town were filled in all the lower rooms with water'.[2] The summer that followed was hot, except for 31 July, when there was such a frost that 'the King's foul (fowl) walked on the ice'. The heat of August was somewhat abated by rain on 10-11 September. November proved misty, and December mainly frosty but 'still drie' to the end of the year.[3]

This dryness, except for occasional snow falls, continued
1678/9 until mid February; but just before the winter finally broke, there was a thaw round 3-6 February, which caused floods in the neighbourhood of Stratford, so that Newcome 'went through trouble and come dangers of the waters'.[4] Rain fell, in Oxford, on Sunday, the 16th., but for five more days there was none. Then, on the 24th., there was rain 'in the morning

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1. A.W.
2. Hist. MSS. Com. 29. III.
3. A.W.
4. H.N.A.

which is more than hath been in (? since) November last'.[1] The year continued dry for some time longer, but the actual
1679 summer months are said to have been 'wet and a sickly time'.[2] Certainly the greater part of September was wet, and on the 14th., there was 'much raine .... a great deal of corne is spoyled'.[2] The beginning of October was also 'a very wet and sickly season', and afterwards was 'patchy'[3] To the end of the year the weather in Oxford was worse than usual. In October Wood writes 'There was so much raine fell this month that it caused a great flood about Oxon, and the water falling away in the beginning of Nevember left a nasty moorish stink in the meads to the putrefaction of the aire.'[4] This was followed by illness, which was increased by the lack of sunshine. To add further to the miseries and discomforts of the people of Oxford on the 29th., and 30th., 'a floud came down the river Charwell by much raine that fell towards Banbury, 2 or 3 days before .... the meads all drowned, so that this is the second flood we have here'.[5] Unfortunately for the city it was only
1679/80 too liable to these floods, and although the spring of 1680 was mild, all May was very wet, so that further inundations caused 'great spoyle of grass .... but comming and going away by
1680 degrees it did little harm'. A hot June also helped matters and there was no further serious rain till the 30th. Another flood came in mid November, but the harvest was in by that time,

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1. A.W.
2. Ibid.
3. Ibid.
4. Ibid.
5. Ibid.

so, again, very little damage was done.[1] A period of drought
1681 militated against the prospects of a good harvest in 1681.
From 19 April to 14 August there was fine weather.[2] There was
but one shower in the whole of April;[3] and an hour's rain, at
four o'clock in the afternoon of 2 June.[4] Very little fell on
the 5th., 6th., and 15th., Then on and after the 20th.,
'for a weak (sic) good plentie raine'; but it was soon fine
again. In the latter half of October there was a steady
downpour, 'insomuch that we had a little flood'; there was,
however, practically no more until 10 December.[5]

Dry periods are not of long duration in England, and
on 16 January, 1681/2 Viscountess Campden writes 'The waters
are so out my Lord Noel could not goe today, but does tomorrow
if hee can pass the watters to Asby'.[6] Again about 14 February,
1681/2 rain fell for a week, and by Sunday, the 26th., Oxford was
once more suffering from flood, mitigated, to a certain extent,
by a frost on 3 March.[7] The rest of the year was terrible.
On 18 April the streets are described as very wet and dirty
1682 and 'over shoes'.[8] Viscountess Campden wrote to her daughter
on 27 April, and said, 'never was such flodds known as has
bine here, houses drowned and pore children drowne in theare
cradels swimen up Fleet Bridge, and there taken up, and tables

1. Ibid.
2. L.G.L.C.
3. J.E.D.
4. A.W.
5. Ibid.
6. Hist. MSS. Com. 24. II.
7. A.W.
8. Hist. MSS. Com. 24. II.

and hogeds full of beare and all washed away and peoppele geting up to theare lofts and hole heards of hogs drowned; and so Roger Pratt comeing from Norfolk narely escaped drounding and logers in Fleet Dich drowned, that never such a flood was known, that it is impossible for me to returne till the watters falls'.[1] Again on 1 May she writes that it is may-day and still rains fast without any hope of fair weather.[2] Anthony Wood bears out what the Viscountess stated in her very peculiar spelling. 'All the month of April' he writes 'especially the latter part being extreame wet, wee had a flood at the latter end .... and appeared so great in the beginning of this (May) that there has not been bigger these seven yeares. Ill weather continued and wee had raine every day for about six weeks till Sunday, 14 May, and then a fine day'. But that was not for long because there 'followed a smart shore (shower) of rain' combined with a hurricane, on the 21st.[3] September tried to make up for this miserable state of affairs, and there was 'excellent good weather' till 10 October, when there was again 'raine', and by the end of December, Oxford was once more flooded, not with the rain that had fallen in the city, but by the ever-tiresome Cherwell, which brought down the rains from Northamptonshire.[4]

The piteous moan of Anthony Wood can almost be heard in

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1. Ibid.
2. Ibid.
3. A.W.
4. Ibid.

1683 his entries for 1683: 4 May 'it rained': 5 May 'it rained all day': 6 May 'aflood': all the month there 'fell very much wet': 4 June 'it rain'd': 5 June 'it rained all day': 6 June 'a flood'. During the first week in September it rained steaditly in Oxford, and when it was not raining there seems to have been an earthquake or two.[1] With what gratitude Wood must have welcomed the great frost of 1684, during
1684 which his beloved city was free from floods for a time. The cold period was followed by a 'decent' summer, and the early
1685 months of the year 1685, only had occasional rain, and, although Wood records a great deal on Friday, 15 May, and a few showers in June, it was not until the 28th., of the latter that there was 'plentiful rain', in London after nearly two years excessive drought and severe winters.[2] There was heavy rain in the West of England on Saturday the 27th., when Lord Feversham was trying to engage the Duke of Monmouth, near Bath. The ground is described as 'being wett' and the soldiers' arms were in a sad plight owing to 'the abundance of Raine that fell that day'. Evidently it continued wet for at the battle of Sedgemoor on 6 July, the ground was 'all mire'.[3] It must have been quite like old times for Wood to enter on 8 December, 'a flood at Oxford by much raine that fell'.[4] The weather about the same time, in Lancashire, was 'very foule some waters that I was to passe already high and

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1. Ibid.
2. J.E.D.
3. Hist. MSS. Com. 49.
4. A.W.

rising fast'.[1] And on the 31st., Evelyn says that the 'winter had hitherto been extraordinary wet'.[2]

1685/6 The usual discomfort was apparent in January, 1685/6 When Wood writes, 'much raine hath fallen all the Xtmas and in the beginning of this month the waters were very high - a great flood - not greater these 7 years'[3] Unfortunate as this was, the

1686 year seemed to improve in February and March, only to deteriorate in late April and in the beginning of May. On the first two days of June there was 'a great deal of raine';[4] and in London on the 2nd., there was rain 'and foul weather seldom known at this time of year. The camp at Hounslow Heath (army of James II) from sickness and other inconveniences of the weather forced to retire to quarters'.[5] This, however, did not take place until after the end of July, for on the 29th., it is recorded 'such excessive rains have fallen that the trenches are very watery and troublesome to be in for the men's shoes and stockings'.[6] A short time before a strange thing occurred in the Craven District of Yorkshire. The record has fortunately been preserved by a petition for a Brief. 'Between one and three p.m. on 8th. of June last past, there happened an earthquake and a violent and dreadful Tempest of Thunder, haile and raine, which descended soe violently from the Mountaines and out of ye savernes, that it immediately overrun and did teare up the bancks of the rivers running

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1. A.M.L.
2. J.E.D.
3. A.W.
4. *Ibid.*
5. J.E.D. Cf. Hist. MSS. C. 75. p. 179.
6. Hist. MSS. Com. 20 I.

through ye townes of Kettlewell and Starbotton .... when 100 acres of good land were washed away, and 100 acres covered with stones and gravell, the auncient streams were diverted and severall bridges were driven downe and overwhelmed, and many houses destroyed Total losse £ 3017 .. 11s. .. 8d.'[1] After this northern catastrophe, hot weather supervened, succeeded by 'patchy' periods for a short time but it was evidently a bad autumn as shown by a correspondent in Hull on 28 September, who says 'Here hath not been 7 days fair weather in 6 weeks time which never was known', and the corn is still in the fields.[2] The year 1686 ended with no better reputation than many others, for on 17 December, in Oxford, 'most of the day it rained and allnight .... so that a flood followed bigger than we have had for 3 years before'[3]

1687 From beginning to end of 1687 there were tempests and heavy rains. There was a water-spout at Hatfield, Yorkshire, on 15 August. 'In its Progress, it mov'd slowly over a Hedge Row and Grove of young Trees, which it made to bend like Hazle Wands in a circular Motion'.[4] Writing of the same incident a diarist says, 'It being very hot weather, I had the good fortune to behold .... one of those strange works of nature called spouts or rather hurricanes. It immediately filled the air with great black clouds .... a whirling which made

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1. C.N.W.Y.
2. Hist. MSS. Com. 20. I.
3. A.W.
4. Phil. Trans. IV. II.

a noise womewhat like the motion of a milstone'.[1] The following September was very wet and so also October. In November there was 'great store of raine and great inundations about Oxon.'[2]

1688 The interesting weeks of 1688 from a combined meterological and political point of view were those at its conclusion. It had been a cold snowy and very backward spring.[3] There were showers in June;[4] August had its bright days so that the harvest was not lost.[5] Towards the end of November there was a very wet spell, and one day that month the Earl of Ailesbury travelling 'by way of Reading .... was wet through almost from thence to London'.[6] The weather, however, was worse still on the fatal night of 9 December, when the harassed Queen, Mary de Modena and her infant, the 'Old Pretender', fled the Kingdom under the guidance of the Comte de Lauzun, and 'the crossing the water to Lambeth was dangerous enough, a storm blowing, and from thence they went in a coach and embarked at (Gravesend).'[7] The Earl of Ailesbury shows that the weather did not improve, for on the 14th., 'I went in my coach and six horses to Kent Street end .... such a night was hardly known for rain, wind and darkness. One of my grooms rode before with links fastened together which blew out frequently'.[8] It was this wild night that the fugitive James II, on return

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1. A. de la P.D.
2. A.W.
3. J.E.D.
4. L.G.L.C.
5. Ibid.
6. M.T.E. of A.
7. Ibid.
8. Ibid.

from his first flight, spent at the house of Sir Richard Head, at Rochester.[1]

1689 At Oxford, in March and April, 1689, there were heavy rains and floods.[2] During the same months in Lancashire the weather was so wet that the ordinary processes of agriculture were stopped.[3] Most of the early part of May, throughout the kingdom was hot, but Whitsunday, 1 of May, was very cold. The autumn was wet. It was very wet in Essex in October[4] and in Lancashire there was 'heavy rain'.[5] November was cold in most parts. In Lancashire Christmastide was, at first, snowy, but a thaw came on on Christmasday.[6] At the end of the month in Oxford there were 'great raines';[7] and by January,
1689/90 1689/90, there was a great flood,[8] though in the north west there were snow storms.[9] April was a rainy season in Cheshire and Lancashire, and on 5 May it is recorded 'the evening being very wet we came home wet and dirty'.[10] The end of June and the beginning of July were very hot,[11] and in Cheshire they 'got home the hay'.[12] Throughout August there was a practical drought except for occasional rainstorms, on the 8th., and the 9th., when there were very heavy downpours.[13] The aridity,
1691 however, continued more or less, and the year 1691 was in no way famous for rain.

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1. Ibid.
2. A.W.
3. L.G.L.C.
4. Rev. R. Davies.
5. L.G.L.C.
6. Ibid.
7. A.W.
8. Ibid.
9. L.G.L.C.
10. Rev. R. Davies.
11. M.T.E. of A.
12. L.G.L.C.
13. Ibid.

In accordance with the ups and downs of the English
1692 climate the year 1692 was very much the reverse of its predecessor. On 9 June, there was 'much rain', in fact it was 'an extraordinary wet season with great floods'.[1] It was wet all day and night on the 19th., and 20th., and then 'Rain'd every day for a week .... a great flood (at Oxford) all grass spoyl'd, not such weather in the memry of man ..... Midsummerday it began to raine before one in the morne and continued raining all that day till 4 or 5 in the evening: and then held up till about midnight, raining all night', and part of the next morning.[2] 'This whole summer', says Evelyn, 'was exceeding wet and rainy; the like had not been known since 1648'.[3] The greater part of August was wet and 'very unseasonable weather and like to spoyle the harvest of corn as the harvest of hay was before'.[4] As late as 14 September, Evelyn reports that it was still an 'exceeding wet season';[5] and Wood says 'September was a cold and unseasonable month in England as all the months of this year hitherto hath been. An unseasonable year. Nothing but unseasonable times, nothing but sickness.[6] There was, however, some bright weather in October, but it did not continue long, and the general wet ruined the harvest.[7]

1693 The month of April, 1693, was famous for its rain; and

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1. J.E.D.
2. A.W.
3. J.E.D.
4. A.W.
5. J.E.D.
6. A.W.
7. W.H.R.C.

floods were out on the Thames and elsewhere.[1] There was a wet hay harvest in June, and 'little summer yet'.[2] August began 'with lovely harvest weather';[3] but it soon changed, and the month was very wet, and so 'more corne spoyled'.[4] October was better, until the end, when it was 'a very wet and uncomfortable season'.[5] The year closed with snow,[6] thunder and lightning.[7]

1694 The April following, was a great contrast to its predecessor. The whole month in London was free from rain.[8] Not so in the case of May, for Lady A. Cavendish writes that there has been rain 'here every day and May charies are plentiful and strawberries begin to come in'.[9] The all important month of August was soaking and 'much of the harvest is spoyled'.[10] The first week consisted of 'stormy unseasonable wet weather';[11] and on the 7th., there was a water-spout at Topsham, near Exeter, between 9 and 10 a.m. with a wind from the W.N.W., but not violent; and yet in its passage it unroofed houses, tore up trees, and a boat, blown into the air, was 'rent from the Head to the Keel'[12] Early snows and sharp frosts concluded a year that had begun remarkably well.

1695 The great frost of 1694/5, which continued far into April, 1695, naturally prevented downpours of rain. But S. Swithin's day was 'foul, much raine'; and at Oxford, it 'rained every day after to the 26th'.[13] August began very badly in Berkshire

1. A.W.
2. J.E.D.
3. Ibid.
4. A.W.
5. Ibid.
6. Ibid.
7. J.E.D.
8. Ibid.
9. Hist. MSS. Com. 29 II.
10. A.W.
11. J.E.D.
12. Phil. Trans. 1716.
13. A.W.

when 'it rain'd apace'.[1] The harvest in Surrey was set 'extremely back' by 'much wet'.[2] On the 24th., it was 'a very wet forenoon', near Sleaford, and five days later, near Skipton, it was 'a bitter windy rainy day', again on the 30th., there was more rain, near Ingleton.[3] There were numerous downpours before 29 September, followed by a mild October.[4] In Oxford, November began with rain, 'wheras we had not a drop .... from
1696 about a week before Michaelmas'.[5] The next spring was wet; April was fine; June was rainy, and there were bad floods on the Nene.[6] The summer, as a whole, was cold and wet, followed by a fine September, 'and a great harvest'.[7] October, however, was a most miserable month.[8] In London on the 5th., and 6th., 'there having fal'n a great quantity of rain for these two days my (William Morris) mother and sister very apprehensive of the waters being out: and we rather chose to lose theire aruest (? instalment money for the coach) than run the hazard of drowninge or overturninge .... if the weather continues bad a weake longer, they will not venter on a northern journey (to Lancashire) this winter .... The King is expected hourly .... if the badnesse of the weather and the wind veeringe a little southerly has not turned him back'.[9] The month continued wild and stormy and proved 'an ill seed time'. On 9 November

1. J.B.J.
2. J.E.D.
3. J.B.J.
4. J.E.D.
5. A.W.
6. J.E.D.
7. Morton.
8. J.E.D.
9. N.P.

a correspondent in London writes to Thomas Coke 'If your weather in the country be like ours here I can't but pity your melancholy retirement. We have two or three days together hard frosts and then as much storms and violent rain'.[1] The rest of the year was frosty broken occasionally by rain.

1696/7 It looked as if January and February, 1696/7, were going to rival previous frost years, although, however, there was much snow, these months did not attain any records of extreme cold. In London, on 11 March, 'it rain'd pretty thick'.[2]
1697 April, May and June had many downpours with heavy thunderstorms; on one occasion when the Verney family were making a visit to the ship 'Bretana', on 13 May,'it proveth soe very wett and winday that I feare that will be no pleshur'.[3] September was bright:[4] October was stormy;[5] the latter part of the year was frosty and cold. But if this year did not reach the severity of some famous snow years, the spring of 1697/8, and even
1698 into May, 1698, were periods of 'exceeding sharp and cold'[6] Throughout these months rain was not prominent. On 2 May, Edward Harley reports that rain had fallen after the long drought; there was heavy rain in June;[7] on 29 November Robert Harley says it has been snowing the whole day without intermission; and again on 31 December he writes 'my brother came

1. Hist. MSS. Com. 23. II.
2. Phil. Trans. 1716.
3. V.L.
4. J.E.D.
5. R. de la P.D.
6. J.E.D.
7. V.L.

safe yesterday. He had a most terrible journey .... Rain and floods were very troublesome to him'.[1] The next year, however,
1698/9 was very different. In February, 1698/9 Evelyn records that it was one of the wettest winters for the last fifty years.[2] On the other hand May and June proved dry, until a 'refreshing shower' on the 11th. of the latter. After that the heat wave started again, until about 23 July, when there were 'reasonable showers'. And on the 29th., Robert Harley states that the week has produced much rain.[3] The pleasant summer
1699 continued, but 1699 cannot be regarded as a perfect year as there were cutting frosts in October and fogs in November; but taken as a whole it was a good year of pleasant and normal
1700 character.[4] Very much the same may be said of part of 1700; but in October there was a good deal of wet weather, and on the 20th, Lady Gardiner wrote to Sir John Verney that in a journey from Bath a friend had found 'the wayes so bad as shee had 8 horses to get her out of the dirt & sinc ther having fallen much raine I feare the wayes are much wors'.[5]

1700/1 After the usual snowfall in early January, 1700/1, there were, in many places severe floods. Thus at Esholt, Yorkshire, on the 17th., Sir Walter Calverley, Bart. could not go to the funeral of a friend at Leathley owing to 'the waters being so

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1. Hist. MSS. Com. 29 III.
2. J.E.D.
3. Hist. MSS. Com. 29 III.
4. J.E.D.
5. V.L.

high'.[1] There was, however, no considerable rainfall until
1701 about 17 May, when there were 'very plentiful showers'.[2]
August was hot at first, but changed 'to wet, dripping and
cold'.[3] Nothing remarkable in rain fall is to be recorded
for 1702. There was 'an uncommon long continued rain'[4] in June,
1702
1703 1703, in August travellers made a journey in 'A wet and dismal
case',[5] and the tempest of November, and account of which is
1704-5 given elsewhere,[6] was terrific. The years 1704 and 1705
were on the whole fine, which well they might have been after
the horrors of 'the great storm'. Though in the former year
Lord Chesterfield wrote on 11 June 'as soon as we came to
Bretby we had reason to think that we left summer at London,
and found winter in Derbyshire, for it has been so windy, rainy
and cold that we have been obliged to have constant fires in
our chambers ... we shall have very little or no wall fruit
this summer.'[7] And on 30 July of the latter year Defoe says
that at Crediton 'this country has been cooled with plentiful
rain, and is now very refreshing'.[8]

1706 A wet season again set in during 1706, when there were
exceptional rains and heavy floods. In Yorkshire, on 13 July
there was a disastrous flood which rose higher and higher for
several days. One farmer 'lost fifty load of hay .... near
upon £100'[9] At Denbigh, on Tuesday, the 16th., it rained in-

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1. Sir W.C.D.
2. J.E.D.
3. *Ibid.*.
4. *Ibid.*
5. V.L.
6. *vide* ch. VI.
7. Hist.MSS.Com.23.III. 8. Ibid.29.IV. 9. Y.A.S.J.

cessantly for 30 hours, crops were washed away, and a dozen
1707 bridges broken down.[1] September was also a bad month. The Duke of Newcastle writes on the 21st., that the troops at Hull are 'half-starved by the bad weather'. And on the 22nd., Defoe writes from Leicester 'I was locked up by a rain of forty-eight hours without ceasing, and ... we have not had one dry day since I set out'. On the 30th., at Newcastle-on-Tyne he says, 'this two last days have been the only days without rain since I left London'.[2] Of thunder-storms in the next two years there were plenty; but the noticeable
1708 incident connected with rain-fall after an unkindly spring[2b] was a water-spout at Patchley Bridge on 5 August, 1708.[3] A year later the spring had witnessed heavy rains near Brackley[4]
1709 and in the autumn, on 26 September, 1709, Sir Thomas Mansell wrote to Robert Harley, 'This comes to welcome you home, I fear, after the worst roads and weather that have been known this time of year; and 'tis well you came as you did for we have had such storms and floods all last week .... our harvest is not near in, and the crops especially wheat be indifferent'.[5]

Of exceptional rain there seems to be little record
1710 until 1710; even then the summer was fine and 'very dusty'.[6] September was good until the 27th. During early October and

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1. Phil. Trans. IV. II.
2. Hist. MSS. Com. 29. IV. 2b. Ibid.
3. Phil. Trans. 1721.
4. V.L.
5. Hist. MSS. Com. 29. IV.
6. Hist. MSS. Com. 29 IV.

in November the rainfall was heavy; and on 5 December, Swift writes, 'we have had the devil and all of rain', and, on the next day, he says, 'it's such monstrous rainy weather that there is no doing with it'. Three days later, he points out, 'it is such abominable weather that no creature can walk'. On the 11th., 'it rained all day', and the 13th., was 'the rainiest day that ever dripped'. Two days after Christmas, he again writes, 'we have not had three fair days these six weeks'.[1] In the next year, he uses much the same phrases. Writing
1711 on 6 April, 1711, he says, 'we have not had five fine days this five weeks, but rain or wind. 'Tis a late spring'. And on the 20th., he complains, 'It has cost me two shillings in coach hire and a great deal more this week and month which has been almost all rain'.[2] Elizabeth Coke tells almost the same story on the 21st., saying 'we having had much unexpected great rains that 'tis now mighty floods'.[3] May was equally rainy, but June was fine and hot. July began with rain; on the 4th., it rained; the 6th, was 'an ugly rainy day': the 7th., was 'the dismallest rainy day I ever saw'. It poured on 1 August, then, was fine for a fortnight, and following on that, from the 17th., to the 28th., it was mainly wet. Dry weather succeeded to 4 September, on the night of which 'it rained mightily .... and the streets were as dirty as winter'.

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1. J.S.J.S.
2. Ibid.
3. Hist. MS. Com. 23. III.

This rain continued and on the 12th., Swift again groaned over the expense the bad weather was causing him in hire of coaches and chairs. The month of October was equally wet, until the 21st., but two days later the torrents began again, and continued on and off through November and December. On the 18th., of the latter, the temper of the Dean was sadly tried, and he writes, 'it has rained hard from morning till night and cost me three shillings in coach hire. We have had abundance of wet weather'.[1] Lord Fermanagh adds his outpourings of discomfort to those of Swift. On 6 December he writes to the Rev. W. Vickers, 'I had a very bad journey, both for Rain, Bad Ways and flouds; at one place, the waters were above the waist band of my Breeches so that I went thorow a Cold Bath, and so to the next Alehouse, where I stript, and by a vast fire in three hours I dried my Skin, Linnen and Woollen'.[2]

Rain! Rain! is the main burden of Swift's weather reports
1711/2 and he carries them on into 1711/2 and 1712, though perhaps
1712 with not quite so much persistence. In the latter year, however, in Buckinghamshire there were in November 'nothing but continued great Raines, and they say that the flouds are so great at Stratford by Bow that people cannot pass with Boates'.[3]
1712/3 The February of 1712/3 seems to have been a very wet month. Swift writes on the 19th., 'our weather continues as fresh raining as if it had not rained at all'. The first part of

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1. J.S.J.S.
2. V.L.
3. Ibid.

March cheered him, but the old cry is repeated on the 20th., 'it rained all the day and ruined me in coach hire'. Five days later, he says 'the weather worse than ever': on the 28th.,
1713 'coach hire goes deep'; and on 4 April, 'it rained all day'.[1] Poor Dean! His typically human journal to Stella was all too short.

1713 The summer months of 1713 in the north were fine and this 'continued so for ye most parte of ye next winter',[2] and
1713/4 into the opening of 1713/4 but in the neighbourhood of Enfield 'the weather has been so wet all this Summer (dated 3 Sept.1713) that the tribe of Bulbs has suffered very much; and , indeed, few Plants have thrived for want of sun and heat'.[3] Rain came, however, in March, and on the 9th., in Cheshire, 'when we were ready to sow happened the greatest flood in these small rivers that has been seen in our memory'.[4] At Oxford, on the other
1714 hand on 6 July, 1714, Dr. Stratford says 'no rain yet with us, nor can we tell when our river will be navigable again, and the Thames remained very low till 19 August.'[5] The rain began to fall towards the end of July, and on the 24th., the Rev. George Stanhope wrote from Lewisham to the Earl of Dartmouth to explain a catastrophe. 'Upon the rain fallen today' he says 'My Lady's pew is so wet that great part of it cannot be used and the lining will be quite rotted'.[6] Rain came again heavily in 1716, and Viscount Molesworth wrote on 15 September, 'Pray

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1. J.S.J.S.
2. L.G.L.C.
3. J.N.
4. L.G.L.C.
5. Hist. MSS. Com. 29. VII.
6. Ibid. 20. III.

stay where you are till the weather mends. The very crossing of the ferries .... between Chester and the Head is now a dangerous piece of business'[1]; And Sir Thomas Cave complains of the same 'sharp winds and weather on the 19th.[2]

1716 For the next astounding incident connected with rain, it

1718 is necessary to look forward to Tuesday, 3 June, 1718. On that day, at 10 a.m. there was a water-spout at Emot-more, near Colne, in Lancashire. A number of persons, digging peat, 'were so terrified with an unusual noise in the Air that they .... ran Home .... But to their great Surprize .... were intercepted by Water; for a small Brook in the Way was risen above Six Foot perpendicular in a few minutes Time and had overflown the Bridge .... There was a great Darkness in the Place when the water fell without either Thunder or Lightning .... The Ground was torn up to the very Rock .... above seven Foot deep, and a deep Gulf made for above half a mile'[3]. Many a day has to pass before there is any record like this, illustrating the immense and disastrous powers of a water-spout. Ordinary floods, however, are always common. Lady Fermanagh wrote to her husband on 5 February,

1718/9 1718/9, from Claydon, 'we have had such a deal of wet the country is all in a swim. I am sadly afraid of the floods, when you come pray take care.' Five days later she wrote again 'My deare when you come take vast care of the floods, for the waters have been prodigious high .... I never spent so uncom-

1720/1 fortable winter'[4] Cheshire suffered, as usual, in January, 1720/1;[5]

1. Ibid. 55.
2. V.L.
3. Phil. Trans. IV. II.
4. V.L.
5. L.G.L.C.

1722 and Yorkshire did the same on 18 May, 1722, when, 'Between the hours of three and five in the afternoon, the water rose seven yards perpendicular in Ripponden vale, near Halifax, and bore down in the course several bridges, mills and numbers of houses. Many persons also lost their lives on this melancholy occasion. Ripponden Chapel was much damaged, part of the church yard was washed away, the graves laid open, and a coffin was lodged in a tree at a considerable distance'. The injuries sustained necessitated the building of a new chapel.[1] About the same time bridges were destroyed in the neighbourhood of the town of Sowerby Bridge.[2] The weather was bad in Yorkshire

1723 in June, 1723. On the 7th., when Lord Harley was travelling from Knaresborough to Wetherby, he passed 'through floods upon the ground and very heavy rains overhead, which made it a very uncomfortable stage .... even for those who were in some measure protected against these inconveniences by the shelter of a coach.' The next day such was the unfavourable weather at the ceremony of opening the market at Leeds that 'the continual rain made it not very inviting to traverse the streets of the

1725 town'.[3] It is not until 1725 that Yorkshire again experienced floods anything approaching the Ripponden catastrophe. The inundations of that year were mainly in the North Riding in the Whitby district, when Sleights Bridge was washed away.[4]

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1. N.S. & Phil. Trans. 1734.
2. E.J.
3. Hist. MSS. Com. 29. VI.
4. E.J.

This is not surprising, for this year was one of those awful periods when everyone longed for a good dry spell. At Bath on 17 April Dr. Stratford writes of heavy rain and bad roads.[1] In London, according to John Byrom, it rained on the 18th: it rained in torrents on 11 May: 'it rain very hard .... with intermission on 6 June: 'it rained very fast' on the 7th.; 'it rained very hard .... all day on the 14th., and next day was 'a very rainy morning .... and seemed to be set in for all day'. Byrom writes on Thursday 17th that he went to see the Knights of the Bath at Westminster Abbey, and says, 'paid 2.s. for my seat, and very well, too, for just as I went in it began raining, and most of the people were wet to the skin'. Sunday the 20th was 'a dull rainy day'.[2] August seems equally wet in both north and south alike Sir J. Vanbrugh wrote to Lord Carlisle from Greenwich on 4 September, 'we have had a week or ten days of tolerable harvest weather; now it rains again. But I hope, in spite of all this horrible season, England will fare better than her neighbours; at least I hear of very little corn hurt yet.'[3] A most horrid year!

1725/6 The early part of January, 1725/6 was wet in London John LeKeux wrote to the Hon. John Molesworth from London on 28 January 1725/6, 'I saw the sun last Saturday and Sunday as I was walking in the Park, which is almost the only time I saw it since I have been in England. Except some days that

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1. Hist. MSS. Com. 29 VI.
2. J.B.R.
3. Hist. MSS. Com. 42.

it has rained, snowed, hailed, wind, frost, all in one day, and the sun just peeped out through the clouds, the weather has not been cold this season';[1] but a hard winter set in later.[2]

1727-8 On the whole there is nothing to record of 1727 or of 1728.[3]

1729 It was wet in September at Bath in 1729, as recorded by Lady Irwin to Lord Carlisle, 'We have had almost continued rains ever since we came, that I really dread the roads .... at present the country is all in a sea, and every little brook hardly

1729/30 possible'.[4] At Cambridge the beginning of March, 1729/30 was wet.[5] March, 1731, in London,[6] wasfairly fine. The years

1731-2 1731[7] and 1732 were fine as a whole and the price of corn was

1734 low.[8] In contrast the year 1734, was wet at Plymouth;[9] it was evidently bad, too, in the West Riding of Yorkshire on 6 June for Sir Thomas Robinson writes 'there have been such plentiful rains of late in this country, that the roads are almost as bad as winter'.[10] and the last few days of December both in Coventry and in London were rainy,[11] and this continued into January,

1734/5 1734/5 with snow and hurricanes.[12] The rest of the year was very wet as proved by the bad outbreak of sheep-rot.[13] Byrom also records something of the unsatisfactory weather of the next

1735/6 year. He says that 'it raind' on 9 March, 1735/6, and it rained again in April. May was not so bad until the 17th.,

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1. Ibid. 55.
2. Ibid.
3. Ibid.
4. Hist. MSS. Com. 42.
5. J.B.R.
6. Ibid.
7. G.W.P.LX.
8. W.H.R.C.
9. G.W.P.LX.
10. Hist. MSS. Com. 42.
11. J.B.R.
12. Ibid.
13. W.R.H.C.

when he writes that 'the weather has been very rainy and coolish of late'. It was evidently distinctly objectionable on Sunday the 30th., when Byrom was in Hyde Park and 'we sat down
1736 under a tree, there came a shower and we ran to a better but were wet .... it rained very much'.[1] The beginning of June was fair, but not so the end. On the 30th., 'it began to rain in an extraordinary manner, and continued with little intermission 4 days and nights, the wind being N. and N.E. .... This produced a most extraordinary flood in our river the Welland, in the Nyne (Nene), district, and all the Kingdom over .... an incredible damage done to hay, cattle &'.[2] Byrom records wetness in Manchester in August[3] but, presumably he accepts the vagaries of this autumn and winter and regards dampness as natural and at any rate not worthy of record. And yet it is from him that
1736/7 we again read of rain on Sunday, 23 January, 1736/7, near Oldham; on Thursday, 24 March, near Northampton, and on Saturday,
1737 1738 26 March, 1737, near London, on 22 May, 1738, near Knutsford, and on 22 June in London, when 'it has been such rainy weather here, and so continual, that one would wonder a fair blast too great a rarity'; and on Wednesday, 12 July, at Cambridge,
1738/9 when there was a little rain.[4] The year is classified as one having 'very little good weather'.[5]

The spring of 1738/9 was normal with rainy patches in

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1. J.B.R.
2. W.S.D.
3. J.B.R.
4. Ibid.
5. Hist. MS. C. Com.38.

February and March.[1] Wesley records in London on Easter
1739 Sunday, 22 April, 'a thorough rain'.[2] On the whole 1739 was an unsatisfactory year. Byrom shows a great deal of rain in August, and by 15 September, wanting to go north from London, writes 'The coach is not to go in four days because the roads and weather are so bad.'[3] A contemporary writes, as early as 5 August, 'we have had hitherto as bad a spring and summer as I believe anybody remembers. The fruit of all kinds is .... universally spoilt. We have not had above a week of warm dry weather together, and the last week we have had for five days together nothing but rain which must have done great damage to the corn, a good deal having been cut before the rain came'.[4] Again the same writer makes the entry on 13 October, 'the ill weather we have had ever since Bartemytide to the beginning of this month has made the harvest for barley & exceeding bad, so that in many places it is not worth mowing. This will ruin abundance of farmers .... it is more mortifying as there never was a finer crop'.[5] After a frost October ended in the West of England with 'violent rain'.[6] The year concluded with intense
1740 cold.[7] The following summer of 1740 was most unsatisfactory. Colonel William Douglas wrote to Lord Carlisle, from Kew, on 14 August, that 'the late great rains we have had here have laid our camp in some places under water, and made our canvas

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1. J.B.R.
2. J.W.J.
3. J.B.R.
4. Hist. MSS. Com. 38.
5. Ibid.
6. J.W.J.
7. Nature, 1930 & Hist. M.SS. Com. 38.

houses very damp and wet. Your friend Lascelles thinks if they continue, we'll have no need to go out of camp to shoot snipes'.[1]

1741-4 The years 1741 to 1744 are not distinguished by any torrential downpours of rain. The weather was, except for the great frost, normal and seasonable. The year 1744 was rather

1744 less regular. In Cornwall, in April the snow was still on the hills; it rained at Morva on the 9th., and 12th., it did the same at Gwenap on the 15th, and there was snow on the Welsh hills on the 25th.[2] At the beginning of June there were great floods in the north, particularly in the Coquet which swept away Weldon Bridge on the 4th.[3] The summer of 1745 seems to

1745 have been bad. Sir Thomas Cave wrote to Lord Verney on 8 June 'could I but persuade the weather to be a little on the summer Establishment I am (in) hopes my Cough would also leave me .... Poor Peggy would receive Benefit too, if the old Fashion'd Thing call'd Summer would make its appearance'.[4] Then followed the Forty Five Rebellion which was not without its weather troubles and when the Duke of Cumberland was pursuing the Scots northward, he had a skirmish with them at Clifton Moor, two miles south of Penrith. That night it rained very hard,[5] and added to the difficulties of pursuer and pursued.

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1. Hist. MSS. Com. 42.
2. J.W.J.
3. E.J.
4. V.2.66 - Hist. MSS. Com. 55.

1747 The next flood of any real importance was 2 or 3 June, 1747,[1][2] when, after a colossal downpour, the bridge at Midhurst, Surrey was carried away, the church and churchyard were all awash, and the harvest was ruined.[3] At the end of the month there were heavy rains in the west of England, particularly at Tavistock.[4] November and December were very unpleasant, and John Wesley was wet through from time to time as at Brentford on 30 November, at Salisbury on 1 December and at Bristol on the 3rd. where his discomforts were intensified by melting snow.[5]

1747/8 In London, after a stormy and snowy period, March, 1747/8,
1748 was 'extremely bad' and April, in the same locality was 'rainy'.[6] It was wet in Wales towards the end of May.[7] But these were mere drops in the ocean when compared with the downpour on 23 July, 1748. The story was preserved for later generations by John Wesley. 'There fell for about three hours in and about Hayfield, in Derbyshire, a very heavy rain, which caused such a flood as had not been seen by any living in these parts. The rocks were loosened from the mountains; one field was covered with huge stones from side to side. Several water-mills were clean swept away .... The trees were torn up by the roots and whirled away like stubble. Two women of a loose character, were swept away from their own door and drowned: one of them was found near the place; the other was carried

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1. Brit. C.
2. Gent- Mag.
3. Brit. C.
4. J.W.J.
5. Ibid. 6. J.B.R. 7. J.W.J.

seven or eight miles. Hayfield Churchyard was all torn up, and the dead bodies were swept out of their graves. When the flood was abated they were found in several places. Some were hanging in trees: others left in meadows ....: some partly eaten by dogs,[1] or wanting one or more of their members'.[2] The weather continued unfavourable and Byrom writes in August 'we had a great deal of rain of late';[3] and towards the end of September Wesley says that at St. Mervans 'it rained with little intermission'.[4] The whole of the month of December was very

1748/9 wet and stormy, and this was carried on in January 1748/9,

1749 where in London it is said to be 'still rainy'.[5] The following autumn was marked by downpours of rain and tempestuous winds.[6]

1750 So too, the next March after the earthquake. Walpole writes on 3 April, 1750, 'the spring is wet and cold'.[7] There was 'hard rain' in the west of England at the end of July and the beginning of August,[8] but there was a very hot spell,[9] for a short time, followed by many wet days,[10] which reached a climax in the Gloucester district on 2 September, in a terrific rain-storm for three hours. The city of Gloucester was flooded; mills were damaged at Stroud and Painswick, and trees and bridges were swept away, in particular, a bridge known as Dodbridge, the damage to which was estimated at several thousand pounds.[11]

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1. This shows the non-usage of coffins. But cf. Ripponden, 1722.
2. J.W.J.
3. J.B.R.
4. J.W.J.
5. J.B.R.
6. J.W.J.
7. H.W.L.
8. J.W.J. 9. Nature, 1930. 10. J.W.J. 11. Brit.C.

John Wesley was a painstaking weather recorder, and
1751 according to him the months of April and May 1751 were very wet. In Yorkshire on 14 May there were severe floods on the Ouse after incessant rain.[1] These were followed in Pontefract on the 20th., with a storm which inundated cellars and washed away garden walls.[2] The summer proved wet and cold, agriculture was seriously affected and many farmers had great losses.[3] The floods, however, of this year were easily surpassed by those
1752 of August 1752. On the 25th., and 26th., 'the River Tyne was so swollen that the like had never been seen before';[4] and a great flood on the Coquet again swept away Weldon Bridge.[5]
1753 These floods continued into 1753, and on 17 Eebruary, at Yarm there was a rush of waters occasioned, mainly, by a sudden thaw.[6] The year, however, became normal, except on 11 August, at Camelford, when Wesley was 'met by such a shower of rain as I never saw before in Europe'.[7] He probably changed his mind as to the intensity of this storm after meeting another at
1754 Cheltenham, on 14 June, 1754. He describes it as 'rain mixed with hail[8] .... The rain occasioned such a torrent of water in the street as bore away man and beast (near Coleford). A mile or two further it joined with the waters of a mill dam, which it broke down, and carried away several houses.'[9] The next
1755 year, was famous for a drought, but this concluded, on 7 July

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1. J.W.J.
2. H.S.
3. W.H.R.C.
4. Brit. C. cf. Hist. MSS. Com. 42.
5. E.J. cf. 1744
6. H.S. 7. J.W.J. 8. vide ch. IV. 9. J.W.J. (under 17.3.56)

with heavy rain. At Sheppey and on the Essex coast there were considerable and destructive water-spouts. At Gwenap the end of August was wet and then was steady rain during September at Falmouth, Helston and Launceston.[1] At Wapping, on 17 November, 'rain poured down with violence', but the evening was 'remarkably calm'.[2]

1756 Horace Walpole paints a dismal picture of January, 1756. Writing on the 6th., he says 'Wet. my cellars are four feet under water, the Thames gives itself Rhone airs, and the meadows are more flooded than when you first saw the place and thought it dreary. We seem to have taken out an earthquake in rain .... since the third week in June (1755) there have not been five days together of dry weather. They tell us that at Colnbrook and Staines they are forced to live in the first floor'.[3] The year does not appear to have improved very much. March was snowy until on the 25th., ~~and~~ near Anglesey, Wesley encountered 'a hard rain'.[4] That summer at Harrogate they 'had a vast deal of rain';[5] and in Derbyshire on Saturday, 21 August, there were floods, and two days later at Redditch there was a steady downpour.[6] It was a bad period and there were earthquakes and tempests and blasting winds and deluges of rain until

1757 July, 1757. Then for a moment there was a heat wave, but on the 20th, rain came again at Epworth, and on the 29th., at

1758 Launceston.[7] The spring of 1758 was wet, and on 16 July

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1. Ibid.
2. Ibid.
3. H.W.L.
4. J.W.J.
5. Hist. MSS. Com. 38. 6. J.W.J. 7. Ibid.

Dr. John Waugh wrote from Worcester, 'Here is great plenty, and hay was at first well got, but we have had dropping weather, and, at last, so hard rain that corn rises again in our markets, and we are in some danger of floods'. On the 23rd, he says 'I have not been without a fire in Worcestershire for a fortnight past, and as much rain has fallen, and continues to fall that the prospect is very melancholy. Hay suffers but corn much more, and the markets rise in the prospect of a bad harvest'.[1] The climax came on the 30th., when London received five inches of rain, 'surpassing any in the same month .... in the memory of man'.[2] August[3] and the autumn showed some slight improvement.[4]

1759 This was followed by a forward spring in 1759.[5] At St. Ives, Cornwall, on 9 March there was a great storm 'accompanied with impetuous rain'.[6] During the first part of April, at Epworth, there was 'continued rain';[7] and in June near Birmingham heavy rain fell causing damage by flood.[8] But on the whole it was a good summer with an early harvest.[9]

1760 The outstanding meterological feature of 1760 was on Wednesday, 27 August, when a water-spout did some damage in Cornwall. 'About sunset it began travelling over the land, tearing up all the furze and shrubs it met. Near an hour after sunset it passed (at the rate of four or five miles an hour) across (a) field in Cambourne, sweeping the ground as it went,

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1. Hist. MSS. Com. 42.
2. A.R.
3. Hist. MSS. Com. 42.
4. J.W.J.
5. A.R.
6. J.W.J.
7. Ibid. 8. A.R. 9. J.W.J.

about twenty yards in diameter at bottom and broader and broader up to the clouds. It made a noise like thunder, took up eighteen stacks of corn, with a large hay stack and the stones whereon it stood .... and then passed over the cliff into the sea.'[1]

1761 There is no record of a similar occurrence for some time.
1762 Wesley has plenty to say about occasional rainstorms in 1761 and 1762; but they are usual in character and interspersed with fine weather. In August of the latter year there was what Walpole called 'our drought'.[2] In October, however, there was more than the normal rain, and about the 24th., there was a downpour for several days which resulted in severe floods. At Norwich, all the lower parts of the city were submerged, and, it is said, that for a day or two, probably three thousand houses had water in their lower premises. Several persons lost their lives and the damage mounted into thousands of pounds.[3] The same kind of inundations occurred in the West. At Shepton Mallet, Wesley writes on Monday, the 25th., 'the rain prevented my preaching abroad .... abundance of rain fell in the night, so that in the morning we were blocked up, the river which runs by the side of the town not being fordable. At length we made a shift to lead our horses over the footbridge'.[4] By the 27th., the conditions of the outskirts of London were very bad. In less than five hours the water in the River Lee had risen twelve feet. About Stratford, Westham, Plaistow, and Waltham Abbey

1. Ibid.
2. H.W.L.
3. A.R.
4. J.W.J.

great damage was done. One post-boy and three passengers were drowned in 'the Bury Machine', and there were 'like dismal consequences in most other parts of the kingdom'.[1]

Hardly had the Londoners recovered from this misfortune and all the discomforts attached to the prolonged winter of
1763 January, 1763, than a fresh inundation burst upon them on 13 February. The Thames rose to such a height that many houses on the Surrey side were flooded to the depth of four or five feet. The Long Walk at Lambeth was completely under water; boats were employed to carry people from house to house; in Westminster Hall the water was more than three feet deep; and the inhabitants of Tooley Street and Wapping were obliged to keep to their upper rooms. It is impossible to estimate accurately the losses caused by such a flood, but they were computed at £20,000.[2] From July to December, according to a very careful observer, there was almost continual rain.[3] Thus, for example, in Yorkshire, on 14 July, at Fewstin, Ilkley, Denton, Burley and Lindley there was a violent rain which destroyed crops to the value of £1000.[4] There was heavy rain at Tenby on Sunday, 19 August, with occasional gleams of sunshine;[5] but this was nothing in comparison with what happened in London on the same day. It was more of a thunderstorm[6] than a rain storm, and, perhaps, more of a wind storm[7] than either;

1. Thornton.
2. Ibid.
3. G.W. L.XXII.
4. Y.A.S.J. CXIX.
5. J.W.J.
6. vide ch. III.
7. vide ch. VI.

but there was quite enough of a straight forward downpour,[1] A torrent resembling it occurred on 2 December.[2] Then followed, in the north, snow, and on the 26th., heavy rain with a thaw, so that the River Aire rose to such a height, at Leeds, that it forced down its banks at the head of the high dam, found a new channel and swept away an acre of soil out of School Close, besides uprooting several large trees.[3]

Oxfordshire was, as usual, a county to suffer in time of flood. The inundations that had marked the end of 1763, were

1764 continued into the next year. On 17 January, Lady Mary Cornwallis writes 'we have had incessant rains these four or five months with terrible high winds'.[4] When Wesley was making his journey westward, he experienced much rain at High Wycombe, Buckinghamshire. But when he reached 'Ensham Ferry' (Eynsham), where the toll-bridge had not yet been built, there was a vast expanse of flooded meadows. 'The water was like a sea on both sides .... ten or twelve feet deep'.[5] During the following April there was heavy rain in Yorkshire, both at Hull and Scarborough, and this continued in the north until May, when in the county of Durham, at South Shields in particular, there was 'a violent shower' on the 15th.[6] June and July, in spite of their intense heat, had rain storms. It poured at Chester on the 18th, of the latter; 'it rained all day' at Burslem on the 20th.: there was heavy rain at Pembroke on the 30th; and

1. Thornton.
2. Ibid.
3. H.S.
4. Hist. M.SS.Com. 55.
5. J.W.J.
6. Ibid.

again on 1 August at Cowbridge.[1] The whole year was a remarkable one for floods and high waters.[2]

1765 The records of 1765 are not conspicuous for rain, nor are
1766 those of 1766, except on 9 September, Walpole says 'our harvest though the season has been so fine turns out ill, the preceding rains having starved it with weeds'.[3] For the fine weather, Walpole must have been referring to August, but for the wet he must have had in his mind May, June and July.[4] The latter half of September was uncertain. At Lelant, for example, on Wednesday, the 10th., it was very wet; at Gwenap, on Sunday, the 14th., the evening was calm; and at Bristol, on Tuesday, the 23rd., there was 'a violent shower .... but it was fair again in the afternoon'.[5] The year ended in mildness, not without heavy rains in the West, however, which occasioned great floods in Wales, particularly at Newcastle, Cardiganshire, where the bridge and three or four houses were destroyed.[6]

The mildness of the end of 1766 was delusive, and January,
1767 1767, was bitterly cold, until the 22nd., when Walpole writes 'we had plenty of comfortable rain .... and the weather is much softened'.[7] Then followed a wet Spring. Wesley refers to rain again and again. A downpour, near Lakenheath on Thursday, 26 February; or again on 19 March, near Nantwich, where he had to push 'through the rain and violent winds'; or the next day, towards Liverpool, he 'rode through more storms'; or on Wednesday, the 25th., near Keswick, he records 'the rain which began

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1. Ibid.
2. G.W.I.xix.
3. H.W.L.
4. J.W.J.
5. Ibid.
6. A.R. 7. H.W.L.

yesterday noon, continued till noon today'.[1] It was because of this kind of weather, when May had come, Walpole says on the 12th., 'we have no spring. They say it is the same everywhere'.[2] So, too, Lady Townshend is informed from the Fen District on the 30th., 'we have every day constant heavy or great rains, and the wether over and above cold which hurts the Stock of all sorts of Cattle, and nothing grows ... I have been very wet two Days and that have given me a great Cold ... my Doctor advises me to bleed ... It is a very sickly time in ... the Isle of Ely'.[3] June was little better; on the 4th., in London there were torrents and the Thames was in flood.[4] Once again the Yorkshire streams were in spate, and, especially after a great storm on 4 August, in which buildings, horses and cattle were washed away. The little towns of Hampsthwaite, Fewston, Leathley, Otley, Paunal, Ripon and others suffered damage to the extent of more than £3500.[5] After a wet September,[6] floods were severe in the Liverpool and Manchester districts. The Mersey and Irwell overflowed on 8 October, and the crops were much damaged. Still further north owing to excess of rain the Tyne rose many feet on the 9th., and a bridge across the Allen was washed away.[7]

1768. After a hard frost in the early weeks of 1768, February, in Yorkshire was very wet. In the Leeds district on the 9th.,

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1. J.W.J.
2. H.W.L.
3. Hist. MSS. Com. 19.
4. A.R.
5. Y.A.S.J. cxix.
6. J.W.J. 7. E.J.

the Aire and Calder both rose; many houses were flooded and there was considerable damage. The Tees was in full flood on the 10th., and on the 17th., there were unprecedented floods in the counties of Carmarthen and Hereford.[1] The month of April in the Lake District was very wet as testified by Wesley,[2] who also shows, in contrast, that the beginning of June was unusually hot.[3] But this was very brief, and on the 15th., there was what Walpole calls 'the deluge'. Writing to George Montague, he says 'I perceive the deluge fell on you before it reached us. It began here but on Monday last, and then rained near eight and forty hours without intermission. My poor hay has not a dry thread on its back. I have had a fire these three days. In short, every summer one lives in a state of muting and murmur, and I have found the reason; it is because we will affect to have a summer, and we have no title to any such thing .... the best summer we have is made of Newcastle coal .... we ruin ourselves .... making our houses clamber up hills .... How our ancestors would laugh at us, who knew there was no being comfortable, unless you had a high hill before your house, and a thick warm wood at the back'.[4]

At the very time that Walpole was suffering at Strawberry Hill, far more serious floods were taking place in the North. At Leeds and Bradford, the Aire and its tributaries were again converted into torrents. Bridges were carried away and property des-

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1. A.R. ......
2. J.W.J.
3. Ibid.
4. H.W.L.

troyed. In Bradford great quantities of cloth and wool were swept down the Beck, into which a man and a boy fell with the bridge on which they were standing.[1] Towards the end of August, Wesley 'rode through impetuous rain' near Bridgewater.[2] At Bruton, on 1 September, the river rose three feet in five minutes.[3] This storm was also experienced in London, and, as usual, was 'the heaviest rain that had been known in the memory of man'.[4] It is said to have poured like a rushing torrent down Highgate Hill, and houses were filled to the first floor. The Serpentine rose to such an extent that it forced down part of the Wall of Hyde Park and flowed into Knightsbridge. The canal in St. James' Park flooded the ground up to the Treasury. At Baynigge Wells the water was eight feet above the normal, and the fine water-works in Windsor Park were entirely destroyed.[5] The rains continued and at Great Marlow and other places on the Thames, on the 19th., there were floods caused 'by the late heavy rains', and the west country barges were unable to get to London.[6] On the 23rd., the floods were very heavy at Lympsham,[7] and on the same day a water-spout at Langton Herrings, Dorset, unroofed several houses and barns.[8] The autumn continued wet and owing to 'the late rains' on 3 December, the north and west sides of London were covered with water. At Staines the water was so deep that the Exeter coach was overturned and all the

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1. H.S.
2. J.W.J.
3. A.R.
4. Thornton.
5. Ibid.
6. A.R.
7. J.W.J.
8. A.R.

inside passengers drowned. In Berkshire sheep were swept away: the bridges at Burfield and at Twyford were broken down, and a man and a horse were drowned at Chelmsford. At Gloucester, where 'such a general inundation as the present has scarcely been remembered', the mails were ten hours late; and on the Great North Road, such were the floods at East Retford, that the mails were a whole day late.[1] The year 1768 was a bad year among a group of bad years; in fact, the years 1765 to 1768 inclusive had rainier summers than for seventy years before.[2]

1769 John Wesley learnt by bitter experience what these awful drenching days meant. When he says, 'it rained all day,' near Yarmouth, on Thursday, 16 January, 1769, one can be pretty sure that he was soaked to the skin. He must have been, if possible, even worse off when he writes on Monday, 13 March, 'rain came down amain', near Stroud, and next day the Severn was in flood at Tewkesbury.[3] No man of his time had more to put up with owing to the variations of the English climate than the celebrated preacher. Walpole was interested in the weather, but he suffered nothing at all, although he grumbles, on 26 June, 'we have no summer, I think, but what we raise like pine-apples by fire. My hay is an absolute water-soochy'.[4] The first part of August, in Yorkshire, was hot; but the latter part, in the West of England, was wet; and on Wednesday, the 30th., at Bodmin, there was 'incessant rain driven upon us by a

1. <u>Ibid.</u>
2. <u>Ibid.</u>
3. J.W.J.
4. H.W.L.

furious wind'.[1] The miseries of this year were carried into
1770 the next, and the spring of 1770, was cold and late. Then followed a wet June; and at Pateley Bridge, on Monday the 25th., 'it rained as usual all the time; the next day at Otley and Yeadon it rained'.[2] At Newton-on-Trent, on 13 July Wesley 'rode through heavy rain'; and at Castle Donington, on Saturday the 28th, 'a violent shower brought all the hay-makers home'. After this there was extreme heat for three weeks, broken by a good deal of rain in the first ten days of September in the neighbourhoods of Truro, Taunton and Frome.[3] The first part of October was 'a soft still dry season',[4] although it was wet at Wallingford on Monday, the 15th., and at Whittlebury a week later. November was unsatisfactory, and on Thursday, the 8th., when Wesley was on his way to London, 'it rained almost all the day, being driven upon us by a furious wind'.[5] The north also suffered from these November downpours, which brought with them the usual inundations; and it was at this time that the south arch of Alnwich bridge collapsed.[6] Ten days later the Severn was in full torrent, and at Worcester, the stream rose ten inches higher than it had done on 22 December, 1672,[7] and something of the same kind happened at Shrewsbury.[8] In three weeks of December, the little county of Rutland was swamped by the vast tonnage that is contained in 7½ inches of rain.[9]

1771 The 'five winters' of 1771, as so denominated by Walpole

1. J.W.J.
2. Ibid.
3. Ibid.
4. G.W.L. ix & xxxiii.
5. J.W.J.
6. E.J.
7. Green 8. O & B I 9. G.W.L.viii.

made the year infamous enough in the annals of the English Climate. The autumn was most unpleasant, and after rain on 6 November[1] at Lynn, there was still more in the north on the 16th., and 17th, so that there were heavy inundations at Yarm. The inhabitants must have been seriously alarmed, if not terrified, for the water in the town rose twenty feet, and several persons were taken in boats from the roofs of their houses, and a few lives were lost.[2] Affairs were almost worse in Northumberland. Bridges were swept away at Alston, in Allendal, and at Haydon.[3] A boat-house was torn from the bank at Bywell and eight persons were drowned. The bridges of the Wear and Tees also suffered: in the first case at Wolsingham and Whitton,[4] and in the second, at Greta.[5] Wesley writes of these 'inundations in the north of England, occasioned by the sudden and violent overflowing of their rivers, the Tees, the Were (sic) and the Tyne'. The rivers 'poured down such an amazing quantity of water as utterly astonished the people .... such an overflowing .... none ever saw before, nor have we an account of any such in history'.[6] Wesley then writes that he does not think that this state of affairs was due to excessive rain, but that it was caused by an earthquake which 'wrought in the bowels of that great mountain whence these rivers rise, and discharged from thence that quantity of water.'[7]

1772 There was no outstanding rain storm of 1772; but that of

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1. J.W.J.
2. H.S.
3. Haydon Bridge was swept away again in 1815.
4. This bridge was again swept away in 1787.
5. E.J.
6. J.W.J. 7. Ibid.

1773 19 August, 1773, was certainly memorable. In London it was particularly severe. There had been a very nasty thunderstorm six days earlier, but that was more famous for its lightning, whereas, in this one 'the rain was so heavy in the course of the night that many of the stage coaches that left London in the morning were obliged to return to their respective inns, being unable to proceed from the great depth of the waters in the roads; and several of those that were coming to town were obliged to stop till the waters had subsided'.[1] From then onwards was a wet autumn and winter.[2]

1774 Gilbert White, writes for January and February, 1774, that the months were 'remarkable for great melting snow and vast gluts of rain'; and that on 8-9 March, owing to over-full land springs the woody hanger at Hawkley was torn from its place and fell down'.[3] There can be little doubt that the rains this spring were very excessive and 'raised the waters in many rivers (but principally those westward of London) to a greater height than had ever been known in the memory of man. The levels on the sides of Chelsea and Battersea were entirely overflowed, and considerable damage done to the gardeners' grounds and young plantations. The force of the current in the river was so strong that two west country barges were carried out of the Channel, and left in Battersea fields when the flood abated. Many of the Western roads were rendered impassable; and the

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1. Thornton.
2. G.W.L. xix.
3. Ibid.

towns in general, adjoining to the rivers received considerable injury from the violence of the inundation'.[1] During the year one can trace Wesley labouring throughout the land and battling against 'floods' at Marshfield, in March, or rain on Easter Sunday, 3 April, at Macclesfield; or winds at Rochdale and Heptonstall on 16-18 April; or 'heavy rain' at Biddick and Sunderland on 18-19 June; or 'rain' at Haverfordwest, on Sunday, 21 August, and, next day, 'rain with violent wind' on the road to Bodmin; or finally, on Wednesday, 7 September, at St. Agnes, when 'the rain grew heavier and heavier'.[2] It is not surprising that Walpole growls, on 26 September, 'in this dismal southern region it has rained for a month .... our gentle Thames was swelled .... to a very respectable magnitude .... if we had been drowned I am too exact not to have dated my letters from the bottom of the Thames'.[3] He writes again on 6 October, 'we are in perils by land and water. It had rained for this month without intermission, there is a sea between me and Richmond'.[4] The Thames was equally obstreperous further up its course, and it was at this time that Oxford, again, suffered from inundations. The Church of St. Thomas the Martyr was closed for a month because there were four feet of water in it. The approach to the city was said to be impassable; and 'some inhabitants of (the parishes of) St. Thomas and St. Ebbe being bound to reside on the second(first?) floor of their

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1. Thornton.
2. J.W.J.
3. H.W.L.
4. Ibid.

dwellings'.[1] The weather was much the same in the north; and Leeds was filled with people who suffered great distress owing to 'the inclemency of the weather' throughout the year.[2]

It might have been imagined that after such general wetness
1775 there could have been no scarcity of water in May, 1775, and yet the ponds in the valleys are stated to have been dry.[3] There was, however, rain at Oxford on 3 June,[4] and 'impetuous' rain at Wigan on 26 July.[5] October, in Yorkshire, was wet, and on 20-21st., there was a great flood in the Aire.[6] 'The Bridges of Calverley and Seillington were destroyed and the singular circumstance is recorded of a hare escaping alive on the body of a drowned sheep'.[7] At Whittlebury, on the 24th., 'a violent storm came on, which soon drenched us from head to foot.'[8] And so John Wesley once more suffered the discomforts of rain and gale, as he made his evangelist tours from end to end of the country.

After a winter which Walpole regards as 'frightening',
1776-8 there were the usual rains and storms in 1776, 1777 and 1778.
1779 The year 1779 will ever be famous for its hot July and general freedom from rain; though there was one occasion on 22 July when Walpole wrote of 'a torrent of rain; all the pipes were stopped, and the inundation burst into six places of my house'.[9]
1780-1 This, however, was something of an exception nor were 1780 and 1781 in any way notorious for abnormal downpours. The spring

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1. J.J.M.
2. H.S.
3. G.W.L.xxix.
4. J.J.M.
5. J.W.J.
6. <u>cf</u>. 1790
7. H.S. cf. E.P. 8. J.W.J. 9. H.W.L.

of the latter, however, was wet and, on Tuesday, 27 February, George Selwyn is forced to exclaim that he wishes that it 'was
1782 a little advanced'[1] The year 1782, however, if we are to accept contemporaries as literally correct must have been very wet. George Selwyn complains on Friday, 22 March, 'the weather is so remarkably wet and bad'; the next day he says 'the weather is worse than it has been at any time this winter'; and he shows that on the 26th., it is still pernicious.[2] On 4 June, Walpole writes, 'we have had two dry days after fifty three of rain'.[3] On the 12th. it is recorded that the recruits at Lichfield 'are in general influenzed and will most likely continue so some time as the weather is still rainy'.[4] The weather remained unsatisfactory to the 18th., when 'His Majesty the Sun, who had not shone a good while, came out in a very warm mood.'[5] Apparently 'His Majesty' did not remain in this mood, for on 16 August, 'we are all under water and a postman has not where to set his foot. They tell me that in the north you have not been so drowned .... in these parts everything is to be apprehended for the corn, the sheep and the camps; .... all kinds of prospects are most gloomy.'[6] At the end of the month Walpole again writes 'we have had a most deplorably wet summer that ever I remember after three hotter
1783 than any in my memory'.[7] The summer of 1783 was equally 'deplorable'. 'The month of June', says Walpole, 'has been as

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1. Hist. MSS. Com. 42.
2. Ibid.
3. H.W.L.
4. Hist. MSS. Com. 20. III.
5. H.W.L.
6. Ibid. 7. Ibid.

abominable as any of its ancestors. I was literally half-drowned onSunday night. It rained through two stories, and into the Green Closet .... and my bed-chamber was wet to its smock. The gutters were stopped or could not carry off the deluge fast enough.'[1] Walpole was equally discontented with

1784 June 1784. He says that it was 'according to custom immemorial .... as cold as Christmas. I had a fire last night, and all my rose-buds, I believe, would have been glad to sit by it.'[2] It was equally unpleasant in Yorkshire and the cold and wet continued into July.[3] August was better but it passed into a wet autumn[4] and finally into a December that was rainy, snowy and frost bound.[5]

1785 No unusual rainstorms seem to have occurred in 1785, except on 1 November, at Nottingham, when there was, so it is said, the largest water-spout ever seen in England.[6] The month

1786 of January, 1786, began with 'a deluge of rain' for two days;[7] and what with rain and snow the early months were wretched. Walpole writes on 30 April, 'we have no more spring than we had last year'.[8] The summer was not very bad. There was rain at Leicester on 10 July and some in September and only a patch of fine in early October.[9] The Diary of the Earl of Ailesbury reveals a miserable late autumn. On Thursday, 16 November, he writes 'glass had sunk very much .... and about noon wetting

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1. Ibid.
2. Ibid.
3. J.W.J.
4. Ibid.
5. G.W.1 LXIII.
6. Gent. Mag.
7. H.W.L.
8. Ibid.
9. J.W.J.

begun; the 24th was cold and there was no sun; on the 29th., after a 'fair morning .... about twelve o'clock rain came on, and on 6 December, 'very wet we played at shuttlecock.'[1] Although Wesley records rain at the end of February and beginning

1787 of March, 1787, Dyott writes on the 13th., of the latter, 'the spring .... had not been remembered so fine or so forward, by the oldest men'.[2] Yet Wesley closes the month with rain at Wednesbury.[3] Nor did things improve. The Earl of Ailesbury was prevented from going out on Friday, 27 April owing to rain; and although it was fine on 21 May, it was showery on the 26th.[4] Walpole complains, on 14 June, 'our summers seldom come to maturity';[5] and on 28 July, he says 'one frets at it raining all day and every day .... I do not know who is the saint that presides over thunder; but he has made an unusual amount this chill summer'.[6] Wesley shows 'much rain' at Bristol on Monday, 17 September, and 'heavy rain' at Witney on Wednesday, 17 October; and on Monday, the 22nd., the Earl of Ailesbury makes the entry, 'wet morning and so damp that I had fires in library'.[7] In the north there were also severe downpours and Whitton-le-Wear Bridge was swept away having only been recently rebuilt after the disaster of 1771.[8]

1788 Lancashire kept up its reputation for wet in April, 1788. Wesley records rain and storms, and writes on Friday, 25 April, at Colne 'this is the fifth rainy day we have had', meaning the fifth in succession.[9] The great storm of the year, however,

1. Hist. MSS. Com. 43.
2. W.D.D.
3. J.W.J.
4. Hist. MSS. Con. 43.
5. H.W.L.
6. Ibid. 7. Hist. MSS. Com. 43. 8. E.J. 9. J.W.J.

was on 28 June, in Suffolk, when the rain 'came down in awful torrents for some hours until it caused the greatest inundation ever recorded in these parts. It has ever afterwards been called "The Midsummer Flood".[1] Strange though it may seem, elsewhere there was a drought.[2] In July at Rotherham there was plenty of rain;[3] and August was not without its rainfall as shown by a lunar rainbow on the 17th.[4] An early winter started in November and with breaks continued throughout December.[5]

1789 After a hard frost the year 1789 went through the ordinary course of rain and sunshine. Sometimes the rain is described as heavy; but soon after 'the day was extremely hot'.[6] The Earl of Ailesbury gives a good idea of the spring. On Sunday, 18 January it 'wetted in the morning, but held up at times .... wetting again .... but fair and sun .... but storms in the afternoon'. On Sunday, 22 February 'it was a violent storm with hail' and the next morning it rained when the Earl 'got up'.[7] And so through the autumn. October was poor and the 22nd. was as bad and uncomfortable as possible.[8] December was very free from frost and snow, but there were 'rainy' periods.[9]

1790 January, February and March, 1790, were cold, but this broke towards the end of the latter. On Tuesday, the 23rd., at Dudley, Wesley writes, 'This evening the rain began, and continued about twenty hours after more than four and twenty

1. Whistlecraft.
2. Baber.
3. J.W.J.
4. H.E.D.B.
5. J.W.J.
6. Ibid.
7. Hist. MSS. Com. 43.
8. Ibid. 42.
9. J.W.J.

weeks of fair weather,[1] such a winter as I never saw before'.[2]
This break in March brought heavy rain in Yorkshire and the
Aire and other rivers rose higher than they had ever done since
the memorable flood of 1775, when several bridges were destroyed.
In the flood 'a dyehouse on Shrepsear beck, near Leeds, was
washed away with a large quantity of cloth'.[3] Floods of such
proportions became rare for a time, though there was one on
1791 the Severn, particularly at Worcester, on 24 June, 1791.[4]
1792 Nothing approaching these inundations occurred in 1792, during
1793 which there were one hundred and three dry days;[5] nor in 1793,
1794 when the summer was a 'superb one';[6] nor again in 1794, when
the summer 'was so torrid as to make' Walpole 'seriously ill'.[7]

1795 After a ten weeks' frost, on 7 February, 1795, there was
a great inundation of the Trent at Nottingham, with damage to
the extent of £1,000,000.[8] The Severn flooded, at Worcester,
on the 12th., and the Bridge was threatened with the destruction
but escaped.[9] The Aire in the same February, 'exhibited a
most appalling scene, occasioned by a rapid thaw and heavy rain,
which broke up the ice and swelled the river so as to inundate
all the lower streets of Leeds, where incalculable mischief was
done by the foaming torrent and the immense blocks of floating
ice which carried away cloth and tenters from the fields, threw
down walls, dye-houses and several dwelling houses, and greatly

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1. This is a period of six months, and yet Wesley himself records rain occasionally in September, October and December.
2. J.W.J.
3. H.S.
4. Green.
5. A.R.
6. H.W.L.
7. Ibid. 8. Gent. Mag. 9. Green.

injured the bridge, across one of the arches of which a boat was forced on its broadside, and at length broken to pieces by a vast accumulation of ice and water. All the principal rivers in the county of York exhibited a similar spectacle, and the roads in various places were laid so deep in water as to stop the mails and coaches several days'.[1] After such a beginning, it is notsurprising that the summer was wet and stormy; the year proved one of scarcity and many of the poorer classes were exposed to great distress owing to the extraordinary high price of corn.[2] It is, however, consoling to know that our grandparents had not to contend with quite such

1799 a summer of uninterrupted wet until 1799, when some of the corn in the North was not even cut in November.[3]

Particularly heavy downpours and inundations, unless accompanied by thunderstorms, were not especially marked in the

1802 early years of the nineteenth century. although the year 1802 seems to have been fairly unpleasant. Thomas Grenville writes from Stowe, on 12 July, to Lord Grenville 'Here we are still with "Hey ho! the wind and the rain!" ... we wait only for the sun that never shines and for the new moon that is to make him shine.' And on 17 November, he says 'The sun after whose complexion you make such tender enquiries, has latterly approached very much in colour to the moon and appears to have contracted all the changeableness likewise which is imputed to that delicate

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1. H.S.
2. WH. R. C.
3. Ibid.

luminary'.[1] Owing to the melting of the heavy snow in Feb-
1805 ruary, 1805, there were ssvere floods in some parts. The bridge at Widford, near Chelmsford, gave way on the 12th., but, fortunately, not until a few minutes after the mail had passed over. The rest of the year witnessed much lightning, and this
1806 was also the case in 1806. The downpour of rain during a thunder storm, on 24-5 July, in London, was terrific. Kitchens and cellars were flooded on the first day, but the heaviest fall was between 1 and 2 a.m. on the second, when Oxford Street was inundated; houses near St. James's Street were filled with four feet of water and there were three feet at the lower end of Piccadilly.[2] Later in the year, on 15 December, owing to the wet and tempestuous state of the weather, a piece of the cliff at Brighton, collapsed, and ten unfinished houses were
1807 destroyed by wind and rain.[3] The year 1807, was not unlike its predecessor. As early as 11 May, after hot and sultry weather,[4] followed by thunder, there was a great flood at Derby. In fifteen minutes there were three feet of water in the streets. Doncaster was equally flooded and the Don rose nine feet in one hour and a half.[5] At Stamford on 5-6 June, rain fell 'without ceasing', and the whole fen country was swamped and roads were impassable. At Kimbolton, a man, on horseback, was overpowered by the force of the water and rescued only with the greatest difficulty. Another rider, at Great Stoughton,

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1. Hist. MSS. Com. 30. VII.
2. A.R.
3. Ibid.
4. W.D.D.
5. A.R.

was not so fortunate and was swept away and drowned.[1] These unpleasant conditions continued. At Kendal, on 5 September, three and a half inches of rain fell in sixteen hours, with the natural result that the River Kent became a torrent and a man was drowned. Nor were matters any better in Cumberland and Westmorland.[2] Similar floods took place in the West in November. Hornton Bridge, near Exeter, was swept away on the 10th., after only having been restored six months.[3] The year closed in snow storms.

1808 Little need be said as to rain in 1808. From 1 December, 1809, to 20 January, 1810, there were 'six weeks of incessant rain' in the neighbourhood of Plymouth.[4] In the East of England, at Ramsgate, on 3 July, at 3 p.m., there was a water-spout. 'a stream of water, apparently seven or eight feet in diameter, was observed to issue from a heavy black cloud', and suddenly fall into the sea, 'with a rushing noise .... and rebounding again to the height of several yards'.[5] A fortnight later there was a cloudburst in London during a severe thunder storm . The neighbourhood of Exeter once more suffered about 10 November, when, so heavy was the rain, that a coach was immersed; the horses were cut loose and swam to safety, while the passengers found refuge on a hedge.[6] It is probably to this that Farington refers on 11 November, when he says 'I heard this morning of the great floods which prevailed yesterday. The mail coach

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1. Ibid.
2. Ibid.
3. Ibid.
4. F.D.
5. A.R.
6. Ibid.

did not arrive either from London or Falmouth. The Mercury coach arrived but the horses had swam through a dangerous passage. The water at the lower part of the town (Exeter) was higher last night than had been remembered'.[1] At Dawlish nine or ten new houses were entirely demolished by water pouring down from the hills. The canal bridges and the old almshouses were also destroyed.[2] This bad weather continued; and during a Prize Fight at East Grinstead, on 20 December, there was 'unremitting rain'.[3]

1812 Warren Hastings wrote of the year 1812, 'though we have had much hay spoilt, our crop of good hay has yet been abundant beyond common years. I tremble for the harvest.'[4] Apparently, however, he need not have done so, as the summer was a fine one and the harvest plentiful.[5] Then followed the periods of the

1815 great frost and the great drought. By 16 September, 1815, the latter was serious, for there was no water in the ponds nor grass in the fields. As far as Marsden, near Huddersfield, was concerned, it was broken with a vengeance, on the 18th., by a waterspout, which was 'apparently formed of a dense black cloud, and resembling a long inverted cone, the lowest part of which seemed nearly to touch the ground, whilst above it the clouds were white and fleecy; and seemed much agitated by the water, which after falling appeared to rise again, rapidly, up the vapourous spout with a spiral motion'.[6] The year ended most disastrously

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1. F.D.
2. A.R.
3. F.D.
4. Quoted in <u>The Times</u> 1931.
5. W.H.R.C.
6. H.S.

in the north, where after torrential downpours, there were floods on 30 December, on the Tyne, the Wear and the Tees. Two arches of Haydn Bridge,[1] on the South Tyne, were swept away.[2]

1816 The summer of 1816 was most wretched.[3] At Stafford in the afternoon of 20 July, there was one of the heaviest showers of rain 'ever known'. Incalculable quantities of hay were carried away. At Stone, a horse was washed down a brook and drowned; and the streets of the little town were four feet deep in water; the damage in this small place alone was estimated at £5000. Two days later there was terrific rain at Lichfield; and at Longden, it was thought to have been a water-spout.[4] The hay harvest was not finished in Staffordshire until 10 September.[5]

Omitting records of rain accompanied by thunder lightning and hail, there does not seem to have been a colossal downpour of rain until the night of the death of George III, on 29
1820 January, 1820. That night at Bath the rainfall seems to have been beyond anything in living memory and it is said was not equalled for fifty years. No catastrophe, however, occurred. Unfortunately this was not the case in the disaster occasioned
1821 by the terrible Holmfirth flood on 21 September, 1821. 'after a continuance of heavy rain the great reservoir above Black Sike Mill, burst its embankment, and rolled down the valley a prodigious volume of water, which forced down the buildings in its course leaving the inhabitants, and the workmen, in the mill

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1. It was destroyed in 1771.
2. A.R.
3. W.H.R.C.
4. A.R.
5. W.D.D.

adjoining and at Burn Lea dyehouse, below, only just time to hurry to the heights and escape its destructive fury. The flood commenced at seven o'clock in the evening, and the water had subsided at ten; but the inhabitants did not dare to retire to rest. The next day presented a truly affecting scene of desolation: mud, stones, timber, broken furniture, worktools and prostrate trees were spread over the fields for a considerable extent, and the herbage, fences and buildings in many places were destroyed'.[1] A less terrible condition of affairs, owing to steady downpour, existed in Oxford. The lower part oaf the city was again inundated: Marriages were performed in St. Thomas' Church, whilst the water was in the Church, and the wedding party was conveyed in punts through Hollybush Row, and succeeded in reaching the altar by means of planks. A body for burial had to be conveyed from the Hollybush inn by boat, and it was then found quite impossible to proceed with the interment. The coffin was, therefore, bricked up in a recess by the tower of the church for fourteen weeks.[2] In Staffordshire, during November, there 'was an astounding fall of rain; it is scarce remembered to have had so wet a season';[3] and at the end of that month there were floods in all parts of the country.[4]

1822 The first day of the year 1822 'began with a rain and a continuation of the wet season'[5] and mild and wet weather was,

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1. H.S.
2. J.J.M.
3. W.D.D.
4. A.R.
5. W.D.D.

for sometime, the order of the day. On Sunday, 3 February, 'the river Aire overflowed its banks, and, at Leeds, inundated Meadowlane, Waterlane and Hunsletlan'. The floods in 'all places communicating with the Craven hills, were sudden and alarming, and did considerable damage, especially, in Bradford where', one man 'lost his life after saving most of the perishable property on the lower story of his own house and workshop', and while assisting another 'to remove his .... a heap of subsoil, on which he stood, gave way and precipitated him into a rapid current below, in which he perished unseen, and his body was not found', for some days, 'when it was discovered in the stream at Bolton two miles below'.[1] This storm was also severely felt at Wakefield, and at York, where the Ouse rose five feet in a few hours. The unfortunate township of Yarm again suffered being swamped by an inrush of water seven feet in depth.[2]

1824 No such floods occurred again until 14-15 May, 1824, when in the Southern Counties there were severe losses. There were very heavy rains immediately before these dates, and part of a sugar-house was washed away at Deptford. At Maidstone the roads were converted into sheets of water, at Crayford many houses were inundated. A post-chaise returning to Plumstead was broken in pieces by the force of the water; the occupant and the horses perished in the torrential flood; by

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1. H.S.
2. Ibid. *cf*. 1771.
3.

a miracle, the postboy was saved as he managed to cling to the branches of a tree. In that neighbourhood, there were seven bridges of public importance, swept away. Other bridges, such as at Wade's Mill, near Hertford, at Enfield Wash, and near Rickmansworth were also destroyed. At Ware the Royal Mail was held up for two hours before the driver dared to make any effort to proceed. At Wandsworth, owing to the flooding of the Wandle there was much misery. Even the uplands of Highgate and Hampstead suffered from inundations, so that it is not surprising that this flood is said to have been the worst for twenty-nine years.[1] But it was after all, natural, and though distinctly unpleasant, in no sense uncanny. Not so, however, with the hurricane and flood on Stanbury Moor, near Haworth on 2 September. There had, for some little time, been a complete stillness, Mr. Bronte records that 'the clouds were copper coloured, gloomy and lowering; the atmosphere was strongly electrified'.[2] Then followed thunder and wind of a raging kind. Whereupon a chasm opened on the moor out of which came muddy water and this poured into the Aire so that the river, the next day, at Leeds, 'was in such a putrid state as to poison great quantities of fish; and the water became for a time entirely useless'.[3] Stones of immense size and weight were carried by the torrent a considerable distance'.[4]

The Aire was ever an old offender, but it does not seem to
1828 have played any serious tricks again until 1828. It was not

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1. A.R.
2. E.P.
3. A.R.
4. E.P.

alone in this. Between 10-14 July, the Aire, the Don, the Calder, the Ouse, the Trent and the Mersey all broke into dangerous and destructive floods. The harvest was practically ruined; roads were made impassable, and many towns suffered serious inconvenience from inundations. In the case of the Mersey, near Chester, on Tuesday, the 15th., the horses of the Manchester coach were up to their bellies for over a mile; and the road at Cheadle-bridge was over five feet deep. About the same time, owing to the swelling of the river Weaver, boats had to be used in the streets of Nantwich and Northwick.[1] At Boston, Lincolnshire, there was a water-spout. 'The day being sultry and oppressive, and the sky covered with thundery-looking clouds, a small cloud was seen suddenly to descend in the shape of a column, and, as suddenly, a similar one appeared to rise from the earth .... it advanced .... accompanied by a loud rushing sound.' Manure was carried a hundred yards, wheat was beaten to the earth; and it drew into its vortex a cart which it lifted with violence' and carried forty-two yards. It also took up a heavy roller, and removed it some little way. Probably its most destructive effort was when fifteen geese were drawn into the swirl and hurled back dead.[2] At the end of the month Cheshire and South Wales, again suffered from floods owing to 'the long continued rains'. The Dee rose higher than it had done since 1798, and several bridges were carried away. At Wrexham, some persons had to be rescued

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1. A.R.
2. Ibid.

from their houses by breaches being made in the roofs, and later the houses were destroyed by the force of the waters.[1] The streets of York were flooded on 3 August by torrents of rain;[2] and again in Wales heavy rain fell on the 8th., and 9th.[3]

1829 The next year on 3 July North Wales experienced a water-spout whereby the rivers were converted into torrents, the roads were made impassable and the London and Holyhead mail was seriously delayed.[4] On the 11th., at Black Hill, near Adle after a heavy rain and thunder storm, the embankments of a reservoir gave way and the water poured down as a torrent. Mills were overwhelmed, 'houses and cottages exposed to the inundation were deluged .... this was by far the most calamitous flood that ever occurred in the neighbourhood of Leeds'.[5] England, as a whole, had its 'disagreeable wet weather' in September,[6] and there was an 'inclement season'[7] during December.

1830 Those who were alive in 1830 ought not to have grumbled too much about the English climate as exemplified that year. There was frost and snow when there ought to have been in January,[8] there was 'fine weather for the season' in Mid March but wet in the later weeks.[9] Then followed a little snow and a rainy thaw round 4 April.[10] There were thunderstorms in May, June and July, with, perhaps, rather too much rain.[11] But on the 20th., of the latter it turned to 'fine seasonable weather

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1. Ibid.
2. Ibid.
3. W.D.D.
4. A.R.
5. E.P.
6. W.D.D.
7. Ibid.
8. Ibid.
9. Ibid.
10. A.R. 11. W.D.D.

of which the crops were in great want'; and in October, in Staffordshire, the inhabitants 'were blessed with delightful weather'.[1] Even December behaved as a model month; a sharp frost came when it might well be expected, on the 12th., and though Christmas Day had not its appropriate snow, a heavy fall came on the night of the 27th.[2]

1831 It is impossible to write so cheerfully of the year 1831. The diarist says on 24 January 'the weather has been untoward .... which made the roads indifferent'.[3] Then after snow there was rapid thaw and rain and the River Severn rose to such an extent that 'a bargeman in a fishing coracle, sailed for a wager, over the town walls at Roushill, near Shrewsbury, in some of the houses of which there was water six feet deep.[4] The next day at York the situation was astounding for the Ouse and the Foss had risen higher than for two hundred years.[5] The main part of the summer was fine; but on 17 August, there was a great rain storm for two hours at Liverpool during which much damage was caused in the warehouses by flooding.[6] During the following spring floods occurred to a considerable extent in the southern rivers. The Thames, the Kennet and the Lodden

1832 were all over their banks on 28 January, 1832.[7] At the beginning of March there was much rain in Staffordshire, particularly on the 6th., and 7th.[8] As for 1 May, Dyatt says 'a more gloomy one I have seldom witnessed .... Furious rain .... wet and

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1. Ibid.
2. Ibid.
3, Ibid.
4. A.R.
5. Ibid.
6. Ibid.
7. H.Y.B. 8. W.D.D.

uncomfortable as need be'.[1] At Walsall, on 12 June, there were torrents of rain for two hours.[2] At the end of August there was continuous rain[3] which is said to be the condition of affairs until the end of December.[4]

To what extent William Dyott was influenced by the moment is, now, an insuperable problem. He may have, quite unconsciously exaggerated, like others greater than himself. If his weather reports are to be believed, we must accept from him that
1833 1 March, 1833 'was the most continued day of storm and rain I ever remember'.[5] There were plenty of storms to follow, but a definite reference to 'torrents of rain' does not seem to occur in any record until 31 December, when London suffered from a downpour and hurricane.[6] There can be little doubt that Englishmen are never satisfied with the weather at any given moment. As Dyott grumbled about the quantity of rain in the spring of 1833, so he complains on 11 April, 1834, that the country 'is wanting some showers'.[7] That year, it is true,
1834 showers were scarce. Not so in the next. They came frequent-
1835 ly but generally accompanied by thunder and lightning. The summer was, on the whole, a hot one, and October was a 'most
1836 glorious fine autumnal season'.[8] By 4 July, 1836, Dyott is again clamouring for rain.[9] It came, and so, on 27 August he complains that 'the weather has impeded the crops'. After that he ought to have been satisfied, for if he did not like

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1. Ibid.
2. A.R.
3. W.D.D.
4. Ibid.
5. Ibid.
6. A.R. 7. W.D.D. 8. Ibid. 9. Ibid.

it fine and warm, and he did not like it wet, the year gave him heavy snow. What more could he have expected in England?

After s spell of sharp frost, most depressing weather set
1837 in about 15 January, 1837. Dyott writes on the 22nd., 'the weather so unpropitious .... a week of the most inclement weather I can remember. Cold, damp north east wind with continual downfall of sleet and rain'.[1] April was the same 'with dripping rain'.[2] On 3 June 'the morning was rainy'. As a remarkable fact he records, in July, that he carried his hay 'without rain'; but on the 19th., there was 'heavy rain', and in August there was 'rather dripping weather for the harvest'.[3] All this wet weather was, however, entirely surpassed by the state of things in December, particularly in the north of England. During the last week of that month there was a colossal downpour in Manchester and Salford, where much damage was done to property, fortunately without loss of life. Near Cheadle a coach was very nearly swept to destruction in the floods. An almost worse case was that of the Royal Mail which, after leaving Preston for Liverpool, was unable to proceed for a considerable time as the horses could not oppose the violence of the storm. The inside of the coach was filled with water, and the passengers were obliged to get out to avoid being drowned. In Yorkshire there were similar dangers. In Leeds there was some damage by flood, but in Bradford it was more

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1. Ibid.
2. Ibid.
3. Ibid.

serious. The Beck rosewith incredible speed; horses were drowned and houses were swamped.[1]

Lancashire always seems to be unfortunate in rain and flood. The county was again visited by both on 25 June,
1838 1838. On that day, there was a very severe storm at Preston which lasted about five hours, with'heavy downpour'. The Ribble and other streams were quickly swollen; bridges were broken down near Mawdsley and Croston; 'trees and hedges uprooted, and the highways over which the torrent passed completely unpaved'.[2] This was a precursor of the tremendous fall of rain, on 6 July, at Manchester, Rochdale, Bolton and Preston, and in several towns on the Yorkshire border. The storm again caused serious floods, a number of persons lost their lives, and, both at Rochdale and Bolton, bridges were washed away.[3] At Stainborough, Dodworth and Silkstone, near Barnsley, there was a similar outburst.[4] The rain fell in torrents, and the neighbouring valleys were flooded with the result that human lives were lost and a certain number of cattle perished. 'In the valley on the south west side of Dodworth, the water rose to such a height that it reached the entrance of a coal-pit in the hill-side .... called Moorside Pit, the water rushed in, so that in a short time the pit was filled. A number of colliers were at work in the pit, and twenty seven persons perished in the water, eleven of them females .... At Silkstone the entire village presented the appearance of a

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1. A.R.
2. Ibid.
3. Ibid,
4. H.S. suggests 4 July. A.R. probably correct with 6 July.

complete ssheet of water: from one end .... to the other it was impassable for a few hours'.[1] In contradistinction there was 'charming fine autumnal weather' at the end of September; but 'heavy rain' came again at the beginning of November.[2]

1839 Gales of very extraordinary violence marked the early days of January, 1839; 'patchy' weather followed; and there was some 'cold rain' on 9 May. The summer was 'harsh' and cold; and the autumn was no more pleasant. Dyott writes on 10 September that the weather was 'most unfavourable from continued rain'.[3] It is recorded that about the 15th., 'the public journals were at this time filled with accounts of the heavy rain which was experienced throughout the country in all directions. The bad weather appears to have reached a crisis, on the 14th., and 15th., ... all the rivers in the country were swollen to an height almost unexampled .... with disastrous results to the agricultural produce on the banks, particularly in the north of England'.[4] Dyott again refers to 'continued heavy rain' at the end of November.[5] And well he may for on the 29th., there were great inundations. In Hertfordshire the rain was torrential. At Cheshunt-Wash 'the meadows presented the appearance of a river'; sheep and cattle were drowned. The towns of Watford and Barnet were under water, and the lanes were 'rendered impassable from the depth of water'. Near

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1. H.S.
2. W.D.D.
3. Ibid.
4. A.R.
5. W.D.D.

Watford in 'Bushey-mill lane, where the water was very deep a cart was taken off its wheels and overturned'. Along the Thames hundreds of acres were under water; and in London 'the tide ... being met ... by an immense body of land water descending .... so swelled the stream as to ... overflow its banks'. At Lambeth the streets were three or four feet under water; and Battersea, Wandsworth, Barnes, Chelsea, Fulham and Hammersmith 'presented one surface of water'. The Kensington canal overflowed; while in 'Warwick Square and Kensington crescent, many of the servants sleeping in the basement story had most narrow escapes for their lives'.[1] Nor was this all, for at the beginning of December, the weather was still very wet; and 'the crops, a considerable portion of which were still out, sustained extensive injury .... some quantity of wheat remainig in the fields became worth little or nothing'.[2]

1840 Boisterous and wet weather continued in January, 1840;[3] and by 7 February 'the late rains' had so 'greatly swollen the river' Thames, that a man was drowned at Sandford.[4] March was cold with a northeast wind and a 'trifle of rain'.[5] April was hot and dry.[6] Derby day, 2 June, 'was very fine'. Then there was poor weather for a time; but 31 July 'the weather was delightful: summer actually commenced'.[7] About the middle of August, however, there was almost 'continual rain which

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1. A.R.
2. Ibid.
3. W.D.D.
4. A.R.
5. W.D.D.
6. A.R.
7. W.D.D.

occasioned considerable alarm as to the harvest.'[1] In spite of this the year seems to have been free from disastrous floods.

1841 This was not the case in 1841, when one of a very costly type tool place at Brentford. The beginning of January had been 'inclement',[2] and there had been a good deal of snow. On the 16th. there was an appalling inundation owing to the bursting of the bank of the 'Grand Junctinn Canal'. The destruction of property was estimated at £100,000, but there was no loss of life. Another sad, but far less destructive flood occurred on the 18th., when 'a rapid thaw took place and between four and five o'clock the waters from the surrounding hills rushed like a torrent into the village of Shrewton destroying in its course twenty eight cottages and rendering 150 persons homeless', three of whom perished. At Maddington seven cottages were swept away by a torrent from seven to eight feet deep.[3] After such disasters, except for occasional thunder-storms the year

1842 was normal. Nor were there many untoward events in 1842; excluding heavy rain and floods at Derby in April; part of the summer was 'oppressive';[4] September was 'genial', and December was astoundihgly 'mild'[5]

1843 On the other hand the year 1843 might be designated 'treacherous'.[6] It opened with fine weather; March was most seasonable for agriculture; April and May, however, were wanting in 'settled spring weather', and by the beginning of June,[7]

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1. Ibid.
2. Ibid.
3. A.R.
4. W.D.D.
5. A.R.
6. <u>vide</u> Ch. IV. 7. W.D.D.

owing to much rain in the previous month thå Trent was in flood.[1] There were thunderstorms in July, and 'some extremely hot weather' in August; but on the 28th., the weather broke again. The Queen and Prince Albert were at Southampton and just as they were about to embark on the royal yacht, 'it rained heavily, and as there was not a sufficient covering for the stage intended to run on to the yacht from the shore, the members of the Corporation (like so many Raleighs) stripped off their red gowns in a moment, and the path way was covered for her Majesty's use, so that Queen Victoria, like Queen Elizabeth, walked dry footed'.[2] After such gallantry what could nature do, but smile ? The autumn passed ' in glorious harvest weather'[3] and December died away, as the year before, in balmy mildness.[4]

1844 This mildness, by no means seasonable, opened the new year;[5] ten days later there was intense cold;[6] then on the 20th., a gale.[7] During February, particularly towards the end, there was a return of mildness. A change came in March, on the 18th, snow fell, but on the 22nd. there was heavy rain. So great was this downpour that it caused a landslip at Claston, in the parish of Donington. A piece of ground, measuring three acres, and bearing forty oak trees, slipped down .... a distance of 200 yards. The rocks that fell with it 'forming fantastic shapes of Caverns &, and some of the trees remaining upright as if growing'.[8] July promised well for the harvest,

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1. May, 1843, was the wettest May, with a rainfall of 5.4 inches, until 1932.
2. A.R.
3. W.D.D.
4. H.S.
5. W.D.D.
6. W.D.D. 7. A.R. 8. Ibid.

but during the latter half of August, 'it rained more or less every day'[1], and so the great hopes of land lords and farmers were shattered once again. The harvest of 1845 was not any more successful. Continual rains produced by 6 October, severe floods in the north. In Northumberland the Tyne was filled with farm produce and floating timber; while in Cumberland and Westmoreland, where rain fell incessantly for days together, the rivers Eden, Lowther, Lamont, Lune and Petteril overflowed their banks. 'The scene was terrifically grand, a mighty volume of water rushing down to the ocean; its surface covered with sheaves of corn, large logs of timber, posts, rails, trees and cattle'.[2] The year ended in gales and heavy rains.

1845

1846

These discomforts and miseries were carried into 1846, particularly in Wales and Herefordshire, where on 3 January 'the aspect of the country adjacent to the rivers Wye and Lugg ... was such as has not been witnessed for 14 years '. The destruction of property and sheep was enormous. 'Over .... the Lugg meadows was spread a vast sheet of water, presenting the appearance of a great sea ... nothing could be more dreary'.[3] Then followed a notably hotsummer,[4] broken by occasional thunderstorms, one of which, led to a considerable flood at Clerkenwell, on 1 August. Twenty five houses at Talsarn, Cardiganshire were swamped on the same day, owing to the river Tivy breaking its banks.[5] After what was called 'the magnificent summer'[6], October and November were months of gales

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1. W.D.D.
2. A.R.
3. Ibid. 4. Nature, 1930. 5. A.R. 6. Ibid.

and December was marked by severe frost.[1]

1848 The rain of 1848 was historic in many ways. It played a part in the political history of the country on 18 March, at the celebrated meeting of the Chartists on Kennington Common, where 15,000 persons were supposed to have congregated. Just as the meeting concluded its business a violent rain storm came on, and saved ... the police from taking serious methods to disperse the crowd. So heavy was the downpour that the common was completely cleared from the vast assembly in about an hour.[2] There was rain in Yorkshire in many parts on 2 April,[3] although the Ascot Races were fine, those at Goodwood in July were spoilt 'by the very unfavourable state of the weather'.[4] Owing to a thunderstorm and torrential rain at Over Darwen on 21 August, a reservoir or 'water-lodge' burst causing the death of twelve persons dwelling in one street who were sleeping in the basements. Another alarming accident, on 30 October, entirely 'in consequence of heavy rain which had fallen in the neighbourhood' of Sheffield, took place on the Rother Viaduct. The nineteenth arch of the viaduct was regarded as unsafe because of the inundations, and orders were given to shore it up. Suddenly it fell followed by twelve others, 'the noise and concussion resembling those accompanying an avalanche'.[5]

It is extremely probable that railways in these very early days were frequently flooded but no reference has caught the
1849 eye of the present writer before 1849, when on 3 May, owing to

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1. Ibid.
2. Ibid.
3. H.S. 4. A.R. 5. Ibid.

a cloud-burst at 5-30 p.m., on Bredon Hill, Gloucestershire, the line was submerged to such an extent that the fire of the express engine was extinguished.[1] Other railway lines were flooded at the end of the same year. The beginning of December was notorious for continuous rain; and by the 9th., there were many floods. In low-lying districts railway traffic was much impeded, particularly in the case of the Trent valley Railway after the river had burst its banks. In Norfolk, the Wensune, the Yare and the Waverley overflowed fornearly forty square miles, and though there are no specific references to railway dislocation, much other damage was done, particularly to sheep and corn.[2]

1850-1 The years 1850 and 1851 were not abnormal. Then, in
1852 1852, followed one of the most appalling flood catastrophes known in England. By 5 February, long continued and heavy rains had filled the reservoirs at Holmfirth to an unusual height. On that morning the embankment gave way and the water rushed down the gorge. 'The effects were terrific! every house, mill and factory, the bridges, church and chapels' were swept away. Terrible destruction wascaused for a distance of three miles. The inhabitants at the time were asleep. The loss of life was prodigious. Ninety bodies were ultimately recovered, but it was known that more than that had perished. The estimated damage was £600,000.[3]

The year continued unsatisfactory. The Derby and Ascot Races were seen in wet weather though it was for the moment fine at Goodwood on 27 July. The summer as a whole, however,

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1. Nature 1930. 2. A.R. 3. Ibid. cf. 1821.

was marred by many thunderstorms, and insome cases by severe inundations. There was, for example, a heavy storm at Bristol on 13 August, owing to which the country between Redhill and Weston-super-Mare was flooded, and farm buildings and crops were damaged. 'The violent and incessant rains which set in at the end of August and continued to the end of the year were productive of the most disastrous effects in every part of the kingdom'.[1] On Saturday night and Sunday morning, 4-5 September, there was a twelve hour downpour in the counties of Worcester, Gloucester and Hereford. The river Severn rose rapidly and very extensive losses were sustained in Worcester. On the rivers Langhorne and Leigh bridges were swept away. The Terne rushed down in spate at a great depth, and the destruction of stock and crops was described as 'awful'. About 2000 sheep were drowned in Powick alone; while at Stone-bridge a woman was drowned in her cottage which was swept away.[2] There were also great floods in Nottinghamshire.[3] Well might a contemporary say 'a more desolate autumn has seldom been recorded.[4] A most unfortunate accident occurred, 17-18 November, on the occasion of the funeral of the Duke of Wellington, when the Thames was in very high flood. The hearse and horses were upset in the flooded Bath Road, at Maidenhead. About the same period the towing path at Putney was six feet under water, and the Great Western Railway line was flooded for four miles between Hanwell and Paddington. At Windsor part of the Home

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1. Ibid.
2. Ibid.
3. Nature, 1930.
4. A.R.

Park was four feet under water.[1] No wonder the season was known at Oxford as 'the year of great floods'.[2] Portions of the church yard of St. Thomas the Martyr were submerged; and a man was drowned under the railway bridge. The city was described 'as standing in a seaof water';[3] and the undergraduates amused themselves by rowing over the meadows where, in some cases, no boat had been known to pass before. Above Oxford the Evenlode valley, for more than a week, was like an immense lake.[4] While on the lower Thames there were tremendous floods at Kingston, Egham, Windsor and Staines. Two farmers were drowned at Walton. In other parts the inundations were as bad. At Shrewsbury, 700 houses were swamped; at Hereford a coach was overwhelmed and three of the four horses were drowned; at Market Harborough, Leicester and Birmingham there were deep floods. The counties of Northampton and Cambridge also suffered, and throughout the whole of the Midlands there was very severe loss of cattle.[5] Lancashire had its time on 5 December, when heavy rains, which had continued for a week, flooded the reservoir at Bury, the banks of which gave way and the water rushed through the streets of the town. Fortunately, as it was Sunday, there were no workers in the mills, and though the material damage was estimated at £35,000 there was no loss of life.[6] Lives were, however, lost towards the end of December,

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1. Nature, 1930
2. J.J.M.
3. Ibid.
4. A.R.
5. Ibid.
6. Ibid.

The floods continued in all parts of the kingdom. At Dover and Hastings owing to the rains masses of the cliff came crashing to the sea-shore.[1]

Such floods in historic times were almost unprecedented,
1853 and it must not be imagined that the year 1853, made any compensation. In the north during the middle of July affairs were not so bad, but in the southern and eastern counties the weather was deplorable. There were very heavy rains, the hay crop was ruined and the grass which had been cut was 'afloat'. Railway trains were stopped by waters invading the line, particularly on the Great Western at Reading, Oxford and Banbury.[2] In the Welsh mountains there was a continuous downpour; and the town of Brecon was filled with debris and stones. It was affirmed that on the 8th., in these floods thirty persons were drowned. The Hereford and Gloucester canal burst its banks, sweeping away cottages and agricultural stock. Later in the year, on 20 October, there were floods on the Medway. The waters rose so high that a bridge and road were concealed from a party of hop-pickers in a waggon. Unfortunately the waggon struck the rail of the bridge and they were all precipitated into the stream and some twenty five persons perished.[3]

1854 The year 1854, was famous for its cold, but not for anything
1855-6 exceptional in rain; the same may be said for 1855 and 1856, though, in the latter year, there were many gales on the coast. These continued into 1857. The University Boat Race, on 6 April,

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1. Ibid.
2. Ibid.
3. Ibid.

1857 was rowed in drizzling rain; the Ascot Cup was run, on 9 June, in 'unfavourable weather'; but Goodwood Races took place in brilliant weather on 21 July, and it continued fine all the week. Narratives of storms at sea filled the rest of the year.

1858 Unquestionably the year 1858 was not a wet one. The early

1859 part of 1859 was usual; but on Saturday, 2 July, at 10 p.m., London was visited with a heavy rainstorm, and its low-lying parts suffered much from an inrush of water. The Wandle, once again, burst its banks and Wandsworth was inundated.[1] But after that the year passed away in thunder storms and wrecks at sea.[2]

1860 All records agree in showing the year 1860 an unpleasant one. 'This bitter summer' says one writer 'was aggravated by a rainfall greater than has been recorded since 1815 - indeed, in the South of England the wet was unexampled - '[3] The summer was described by one who looked back upon it as worse than that of 1879, which was, of course, saying a great deal.[4] The description of the weather at Goodwood Races is a vivid illustration of the condition of affairs. 'The Races' usually held among scenes of ripening corn .... on this occasion .... was entirely different. The fields waved with dank green corn and .... the meadows were ridged by the swathes of blackening grass .... The weather was as uncomfortable as at any other period of this uncomfortable year'.[5] In the Peak of Derbyshire, as late as the latter half of December, oats, were being carried.[6]

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1. Ibid.
2. vide Ch. VII.
3. A.R.
4. The Times 17.8.1931.
5. A.R.
6. The Times ut supra.

After considerable cold in January, much storm in February,
1861 and fine Derby and Ascot days, in 1861, there was a heavy rainfall in July in Lancashire, and a particularly violent one at Rose Hill, near Oxford on the 25th. August was warm; in September the St. Leger was run in beautiful weather. Then came a period of gales and on 23 December, the weather during the funeral of Prince Consort 'was in character with the occasion; a chill damp air with a dull leaden sky above'.[1] The
1862 next year was remarkable for a curious storm at Market Laverton and Easterton,[2] at 5.30. a.m., on 2 September. It was composed of a mixture of hail and rain, with a roar like musketry, 'as has hardly ever been recorded'. The whole village of Market Laverton was under water and 'the cottages were inundated to the ceilings'.[3] No similar storm besmirched the annals of the year, although there were numerous gales at sea.[4]

1863 Those who can still remember 1863, may have extremely contradictory reminiscences. The Derby on 21 May was run in miserable weather. 'The rain set in about twelve o'clock with a heavy monotonous downpour, which never ceased, during the rest of the day. The roads were excessively heavy, and many of the horses were unable to drag their dripping loads to the course.' On 16 June the Prince and Princess of Wales visited Oxford which they found 'unfortunately ....very wet'; and during their visit to Halifax, on 2-5 August, they also had to endure 'the rain falling mercilessly the whole time'.[5]

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1. A.R.
2. H.D.D.
3. A.R.   4. <u>vide</u> ch. VII.   5. A.R.

And yet one record speaks of 'the very dry summer of this year'. 1

1864 There can, however, be no doubt that contemporaries did realize that there was plenty of rain in 1864, as in that year there was the most disastrous flood in modern English history. After frost, there was plenty of rain on 7,8,10 January; and again on 2 February; but not much more until during the first fortnight in March there was a fairly steady quantity. This occurred particularly in the north, and mainly round the 11th. which caused a general flooding of watercourses, and what was most serious the flooding of the reservoirs at Bradfield, eight miles from Sheffield. Everything, people, animals, houses, furniture and trees were swept away in the torrent. It was truthfully a case of 'wrecks of whole villages'. On the morning of the 12th., the people of Sheffield were roused by the roar of the water; the streets of the town were soon inundated and all concerned with the amenities of life were destroyed. Space will not allow details of this most terrible disaster; sufficient be it to say that 270 persons perished, and the total damage was estimated at £1,000,000. 2

1865-6 The years 1865 and 1866 fade into insignificance in rain records when compared with 1864; though in 1866 there were, what might in any other period have been regarded as uncomfortable storms, if nothing worse, In the middle of September the downpours were extremely heavy; and, on 16 November, the floods were so great at Otley, that a man was drowned in

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1. Hall
2. A.R.
3.

attempting to cross the bridge.[1] About the same time the Irwell at Manchester rose higher than for thirty years. It was above the highest arch of the new bridge at Salford. Many streets and houses were filled with water. At Blackburn the Blackwater was over its banks and at Darwen there was much damage. Tunnels were flooded on the Lancashire and Yorkshire Railway and train traffic stopped. At Stockport and Stalybridge mill and other properties were destroyed. The Ribble also burst its banks, and became an immense sheet of water, cattle and pigs perished and much damage was caused in Preston. In Yorkshire there were similar disasters. The Calder at Wakefield, rose to an unprecedented height, and some persons were drowned; the Aire overflowed at Leeds but in this case though there was injury to property there was no loss of life.[2]

There is a common belief that when a member of the royal house undertakes to fulfill some public function there is always 'royal' weather. It must be acknowledged that sometimes Nature smiles and accords this generous treatment; but it is not always so, sometimes very much the reverse. So, on 5
1867 February, 1867, when the Queen opened Parliament for that momentous session when the Reform Bill was to be brought forward by Benjamin Disraeli, instead of spring-like weather there was 'a downpour of rain'.[3] Nor was Queen Victoria's grand
1869 review of troops at Aldershot, on 17 April, 1869, any more brilliant. It was, in fact, marred by 'the extremely unfavourable state of the weather'. It must be allowed that the Derby,

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1. Cobley. 2. A.R. 3. Ibid.

that year, on 26 May, was run in 'delightful' weather, but it was wet the night before, and the Oaks, on the 28th., was held in 'a deluge of rain'. The Ascot Cup on 10 June, though not in rain, was run in the'absence of sun and warmth'; and on the St. Leger Day, on 15 September, there were two soaking downpours. Even the Lord Mayor's Day, on 9 November, started badly, and 'the civic procession was marshalled in drenching rain' which afterwards cleared away. Nor were the later days of the year any more satisfactory. There were very great floods after heavy rains on 18-20 December. At Nottingham the Trent was very high. At Loughborough the main road was submerged for a considerable distance. At Derby the flood was said to be the most severe since April, 1842. So bad was it that passengers were obliged to use boats in the streets. About the same time in Lancashire the Irwell, once more, played its usual tricks upon the inhabitants of Manchester. At Bury the waters were deeper than three years before; and the Mersey at Warrington and Latchford caused much discomfort. In Shropshire and North Wales there were also serious difficulties, and these were particularly marked where the Severn and the Rea met at Shrewsbury. In this part of the town many houses were submerged. There was a foot of water in the Abbey Church; and some families had to be rescued from their houses by ladders. At Melverley 'the land for miles presented a frightful waste of waters, with only tops of trees here and there'. It is remarkable, in these extensive floods, that there was no loss of life.[1]

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1. Ibid.

1870 The year 1870, like its immediate predecessors was, very seldom, if ever, to be counted on. The University Boat Race, on 6 April, was rowed, to the satisfaction of many 'under a warm sun and a clear sky'. Race-goers appreciated 'the bright sun and nice breeze' at Ascot on 16 June.[1] In Yorkshire, however, at Dent during the construction of the railway, there was, on 9 July, a great thunderstorm accompanied by torrents of rain followed by a water-spout. The latter burst on the heights between Blea Moor and Whernside. The gorge was almost immediately converted into a raging torrent, and within a few minutes the Blea Moor tunnel was choked to the roof. Marvellous to relate only one workman was killed, but the material damage was very great as bridges and walls were swept away and trees were uprooted.[2] In the south the weather was not so bad but not pleasant. Those who had to welcome the unfortunate Prince Imperial, when after the disaster at Sedan he slipped across for safety from Ostend, on 6 September, must have cursed 'the soaking rain' at Dover, which made the Boy's landing all the more miserable.[3] In contrast, when the ex-Emperor, Napoleon
1871 III, found a refuge in England on 20 March, 1871, he was welcomed by a day that 'was unusually fine'. When the Prince of Wales opened the New Exhibition of Fine Arts on 1 May, the day was bright and cheerful. But these were rather the exceptions than the rules. The Harrow Tercentenary celebrations were sadly spoilt, and on 15 June, 'owingh to heavy rain' the

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1. Ibid.
2. C.N.W.Y.
3. A.R.

cricket match had to be abandoned.[1] Heavy rain occurred in London on the 19th. The Royal Review at Aldershot, on 10 July, in honour of the newly created Prince Imperial of Germany, was 'spoiled by unusually heavy rain'.[2] Although the annual shooting contest at Wimbledon was carried out in fine weather, the ceremony of the prize-giving, on the 22nd., was marred 'by one of those heavy storm showers which have become familiar at Wimbledon; the rain, however, was of short duration, and both before and after, the sun shone brightly.' August was marked by thunderstorms; October had some fine days; but to complete the list of fete days, Boxing Day, a Bank Holiday under the recent Lubbock Act, was 'wretchedly wet'.[3]

It is not often, with all the peculiarity of the English climate, that any particular year has been entitled, 'this
1872 extraordinary year'; but that was so in the case of 1872. The month of January is described as 'wet and tempestuous'[4]; towards the end of the month the barometer was very low;[5] gales followed on the 24th., and there were destructive floods on the 27th., and 28th. The River Thames at Windsor and Eton ran very high; Reading was cut off from Lower Caversham, and 'the Kennet valley presents a vast lake'. At the same time in the west the Severn overflowed its banks. In Northamptonshire a bridge gave way on the Nene, near Castle Ashby, and part of a train of timber waggons passing over it was precipitated into the river.[6]

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1. Ibid.
2. Ibid.
3. Ibid.
4. Ibid.
5. H.D.D.
6. A.R.

February and March were notorious for gales and heavy rainfalls; April earned no favour by a series of frosts and thunderstorms; May presented 'an aspect peculiarly ungenial'; June had only two cloudless days, and included nine equatorial thunderstorms, amongst these, on the 24th., a train was thrown off the line by floods near Leigh, in the neighbourhood of which 'the destruction of crops and houses is extensive and desolation abounds'.[1] July and August were filled with thunder storms; and it was said of September 'Floods and disastrous thunderstorms again characterezed this month'. November was marked by 'heavy' or 'tropical' or 'furious' or 'equatorial' gales, so that, at its conclusion, there were floods in the West on the Parret, the Yeo, and the Tone. At Oxford the towing path was under water, and in Warwickshire the Leam over flowed its banks, and the Avon inundated Stratford.[2]

1873 If anyone, who was alive in 1873, were asked, today, for an account of the weather of that year, it is, quite obvious that he, or she, could not supply it. But, supposing it could be done, the general impression would be that it was fine, with thunderstorms. The glorious character of the weather on Boat Race day, 29 March, would stand out in remembrance, and the 'oppressive gloom' of Good Friday, 11 April, or the'biting cold' of the 29th. might, possibly, be forgotten. It might be remembered that WhitMonday, 2 June, wasfine and 'attracted immense numbers to various places of recreation'. But would

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1. Ibid.
2. Ibid.
3.

there be any recollection of the storm at Bath on 22 July, when there were such torrents of rain that they were said to be more violent than those on the night of the death of George III (29 January 1820) ?[1] Nor would those of an age to do so

1874 remember any more about the year 1874. The keen race-goer might perhaps be able to recollect that, on 2 March, owing to the recent very heavy rains the meeting of the Grand National was not a success because the ground was heavy and rotten; but the same person would have forgotten that Whit Monday, 29 May, was treacherous. It tempted many out because it began so 'fine and dry', and then, about noon, it began to pour and it continued to do so for six hours. The race-goer might once again, remember that it rained at the Derby, on 2 June, but it is doubtfulwhether the great floods in London and district, on 1 1 July, or the coastal gales and wild snow storms that closed the year, would recur to his mind.[2]

1875 The year 1875 began fairly well, but the summer, particularly July, was very wet. It was said by a contemporary, to have 'been disastrous ... to a point that has not been known for some years'.[3] In the middle of July, about the 18th., the counties of Monmouth, Warwick and Gloucester were flooded. At Cinderford the rains were terrific; 'a broad cataract tumbling over the bank of the reservoir, the dam yielded', and from it a pent up flood burst forth. It carried all before it, and part of the railway line, some trucks and a

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1. cf. 1820
2. A.R.
3. Ibid.

bridge were swept away. A somewhat similar accident, only more disastrous to human lives, occurred at Monmouth, where a pond burst and swept twelve persons to an unexpected death. Similar inundations occurred in Bristol and through the Midlands whereby the hay-crop in some places was entirely destroyed.[1] The autumn floods were almost as bad. A letter referring to the state of affairs on 11-12 October says 'I do remember well the floods .... my brother and I were taken to a boarding-school in a small town on the Derwent, near Derby. The first morning we were all taken down to the bridge to see the floods. Sheep and debris of all kinds were coming down, and I never again saw the river in such a state in all the three years I was there .... the flood of October, 1875, was the highest on record, but one, at the Trent Bridge.'[2] A few days later, on the 19th., there was a deluge of rain in Devon, and Torquay, Teignmouth and Dawlish were partly flooded, and considerable damage was done in Exeter. On the 23rd., Derby, Nottingham and many of the Midland towns were again under water. Owing to these inundations a train ran off the line, near Newark, and fell into a submerged field. By a miracle 'all the passengers escaped serious injury'.[3] Between 14-17 November there was one of the highest known floods at Oxford. Railway traffic on the Great Western was stopped at Kensington as the rails were three feet under water, and also on the Witney-Fairford line. The Abingdon Road was declared to be dangerous; and

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1. Ibid.
2. Y.P. Sept. 1931. 3. A.R.

'passengers entering Oxford from Banbury .... made their way through an inland sea, thousands of acres being flooded'.[1] While all this was taking place the inhabitants of London were having an exciting time. Those on the south bank of the Thames were aroused by the police, on the 15th., 'to find that the river had overflowed its banks to such an extent that it was with difficulty many of them could escape with their lives'. The water rushed into Lambeth Palace; some horses were nearly drowned in Commercial Road but rescued by a very gallant boy. 'In some of the streets of Lambeth and Southwark it rose to ten feet above the roadway'[2]

Once again Nature laughed at Englishmen. The summer of
1876 1876 was 'tropical', 'not a blessed drop of rain ..... for a month', and so on; but this state of affairs changed on 31 August, when there were gales and thunderstorms. A month later, on 28 September, there was either a whirlwind or a water-spout in the Isle of Wight. It was like a huge funnel pointing downwards and approached the island between Blackgangchine and the Needles. It passed northeastwards and reached Cowes between 7 and 8.a.m, doing damage to the extent of £10,000. Corn, light articles, and even bricks were dropped on vessels in the Solent, and on the mainland south of Titchfield.[3] Following upon this remarkable phenomenon, floods continued in the autumn, particularly in Lancashire, where, on 8 October, the Irwell rose and destroyed property near St. Simon's Church, Salford.

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1. J.J.M.
2. A.R.
3. Nature, 1930.

The rails and walls of the churchyard fell with the subsiding earth and fears were entertained for the church itself which was only a few yards from the land slide. On the Welsh border there were other accidents. A Bridge was washed away on the Leominster-Kingston line; and at Brecon the lower part of the town was submerged to the depth of four feet. In mid December both the Severn and Thames valleys were flooded, and on the 26th., the latter river overflowed its banks in London.[1]

There was much rain at the end of March and beginning of
1877 April, 1877, and on the 4th., of the latter, 'the All England Bicycle Contest at Wolverhampton' was regarded as 'amongst the most splendid bicycle performances on record' owing to the heaviness of the track.[2] The Derby, on 30 May, was held on a fine day; but the Oaks on 1 June, was run in rain, yet Ascot, on 14 June, was favoured with splendid weather. There was a heavy downpour in the Metropolis on the evening of 4 July; and on the 14th., the Eton and Harrow match 'came to an untimely end in rain'. The next day London and elsewhere were flooded. In Lancashire, the Irwell and other streams rose very high. At Blackburn three men were drowned, and at Oldham two boys met the same fate. In the Preston neighbourhood the Ribble inundated hundreds of acres of farm-lands. It was a lugubrious year.

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1. A.R.
2. Ibid.

The disaster to H.M.S. Eurydice, off the Isle of Wight,
1878 on 24 March, 1878, though not caused by rain, cast a gloom on the early months of a year that was not over fine, bright or warm. There were floods in London on 10-11 April, but Easter Monday, the 22nd., proved a fine day. The Derby on 5 June, was run in unfavourable weather, and the holiday makers on Whit Monday, the 10th., were deeply disappointed owing to 'thunderstorms and numerous showers'. On the 23rd., the torrent in London was very heavy, and railway tunnels in the district were inundated. On the Midland Railway, at Crouch End, traffic was stopped, and there was swept onto the rails sand and stones to the depth of a foot. Even in August the weather was cruel. At the Naval Review at Spithead, on the 13th., Queen Victoria was greeted by 'storm and rain'.[1] Later in the year, Yorkshire suffered, first with snow in the Cleveland Hills and on the Wolds; and on Friday, 15 November, there was a sudden thaw and torrential rain. 'The rivers rose with extraordinary rapidity and great damage was done'.[2] At York, on the 16th., the river was over New Walk and within two feet of the palisades: it was equally high at Castle Havard and Malton. The next day there were heavy showers in the Scarborough district, and by that time,[3] there was so much water out in the Derwent valley that it was impossible to travel by Malton and the journey to York had to be made <u>via</u> Hull. The people in Malton who wished to go to Yorkhad to drive to Castle Havard and pick

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1. Ibid.
2. Y.P.9.9.1931.
3. <u>Cf</u>. 4-5 Sept. 1931.

up a train there.[1] East Anglia was not to escape, but its discomfiture came later. It was not until 16 November, that there were very heavy floods in Norwich, and hundreds of acres were under water in the neighbourhood of Lynn. The sufferings of the east did not, however, relieve the north. At exactly the same time York again was visited, and the river Ouse, mainly owing to melting snow, reached a maximum height of fourteen feet. And at Malton the floods on the Derwent 'reached a height unprecedented within the memory of anyone living'. But even this astounding record seems to have been beaten, for, two days later, there was at Malton a flood of sixteen feet 'and the water was still rising'.[2] The situation was prophetic of what was to come.

1879 Noone will deny that 1879 was a wet year. By many old farmers it was regarded as, and indeed very emphatically called 'a - wet year'. Curtler says, 'The year 1879, will long be remembered as "the Black Year". It wasthe worst of a succession of wet seasons in the midland, western and southern couties of England, the average rainfall being one fourth above the average .... The land saturated and chilled, produced coarse herbage, the finer grasses languished or were destroyed, fodder and grain were imperfectly matured. Mould and ergot were prevalent among plants, and flukes producing liver-rot among live-stock, especially sheep. In 1879, in England and Wales 3,000000 sheep died, or were sacrificed, from rot

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1. C.F.T.D. in Y.P.
2. A.R.

.... Cattle also were infected, and hares, rabbits and deer suffered .... Besides .... this year was distinguished by one of the worst harvests of the century'.[1]

1880 Some days in the year 1880 must have made people hope that their meteorological troubles were coming to an end, but 'hope deferred maketh the heart sick.' There were gales and fogs at times; Henley week, however, was held in 'charming weather. Lovely skies, blue as those of France and beautiful clear air'.[2] But it was all of no avail. The period was bad and the year, 1880 could not shake itself loose from its evil companions. On 20 July, there were heavy floods in the Midlands; viaducts were carried away on the Bala and Dolgelly Railway.[3] These rains continued for the most part in August; and the running in the St. Leger on 11 September, when Robert the Devil won, was very heavy going.[4] On 11 October, the Thames was over its banks practically the whole way from Oxford to Teddington. The Medway rose to such an extent that the Gas Works were cut off at Maidstone, and the place left in darkness. The valley of the Chelmer was completely submerged from Chelmsford to Maldon. It need hardly be added that the harvest was deplorable.[5] Floods continued to the end of the year. The Don at Sheffield swept into many houses on 29 December. At Attercliffe the inhabitants had to take refuge in their upper storeys. On the Welsh border matters were equally bad; roads, near Monmouth, were five feet under water, and the chancel of Dexton Church was awash.[6]

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1. W.H.R.C.
2. F.Y.P. 3. A.R. 4. Y.P. 12.9.1931. 5. A.R.
6. Ibid.

~~1882~~ 1881 Much might have been hoped in 1882, from hard frosts in January,[1] from east winds in April,[2] from the 15th., of July being one of the hottest days 'experienced in England', or from St. Martin's Summer being 'unusually fine and pleasant'.[3] The year, however, taken as a whole from an agricultural point of view, was not superior to its recent predecessors, nor to

1882-5 its immediate successors 1882 to 1885. It is not that these four years were particularly marked by floods; but by the fact that continual gales and storms undid any good result produced by fairer periods. The old type of flood appeared with a

1886 vengeance on 12 May, 1886, when most of the rivers of the counties of York and Chester; and those of Wales and the Midlands overflowed their banks.[4] The really great flood was on the 14th., and 15th., when at Worcester, the Severn rose 17 ft. 10. in. above ordinary summer level, which was said to be the highest record for 115 years. The Trent was even more tremendous for it rose 19 feet, but this is not supposed to have equalled a record of 1852.[5] In addition to these unpleasant experiences, a waterspout burst on Swansea on 4 September, and carried away 8000 tons of earth, from Kilvey Hill; six days later parts of Cardiganshire were swamped; and in October, after a short period of great heat, the camps at Aldershot were flooded during a severe thunderstorm. The year concluded in gales and a final snowstorm.

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1. Nature, 1930.
2. C.M.P.
3. A.R.
4. Ibid.
5. Nature, 1930

'Drought' is the right word to apply to the greater part
1887 of Jubilee Year, 1887, though it was not without its thunder-
1888 storms and gales. The latter continued into 1888, when, on 9 June, there was another terrible water-spout in the village of Langtoft, Yorkshire. It appeared as a funnel shaped cloud, and bearing from the east burst over the hills to the westward. An enormous volume of water flowed down hill forming three parallel fissures in the chalk four of the deepest of which were seven feet. The water then flowed into the village in a stream 40 feet wide and 3 or 4 feet deep; great damage was done in the houses, but there was no loss of life.[1] A flood, caused by a storm of the usual type, occurred in the neighbourhood of London on 30 July. It had been raining for sometime, and distinctly cold, when suddenly a torrent fell and submerged the railway lines and stopped traffic at Croydon. Much misery and discomfort were also caused in Limehouse and other low-lying districts.[2] Downpours of rain and consequent floods continued into August especially in the Home counties. The railway line was so submerged at Ilford that the water extinguished the fire of the engine; and St. Mary's Church, in the same town, was flooded to the chancel rails. At Romford the market place was six feet under water, and 4000 barrels were washed out of the premises of Messrs. Ind, Coope and Co.[3] Snow fell in October; gales were furious in November, and in December, although mild and warm in Devon, in Monmouthshire, on the 29th., there were floods once again.[4]

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1. A.R. <u>cf</u>. 1657.
2. Ibid.
3. Ibid.
4. Ibid.

Large parts of the West of England were flooded on 8
1889 March, 1889, partly due to rain but mainly to melted snow. The Vale of Taunton as far as Exeter 'was the scene of the greatest destruction'. Near Dunster the line of the Great Western was rendered impassable.[1] The Midlands were visited on 27 May[2] with severe inundations, after thirty six hours rain; while Flint, Cheshire and Lancashire suffered from rain and floods about 2 June.[3] August was generally bad producing a most unsatisfactory harvest, and although things improved a little, and November was mild it cannot be said that the year had anything but a bad reputation. If one were to measure years as good or bad by the society functions that were wet or fine, the
1890 year 1890 would not stand out very highly in the category of good seasons. The forty-seventh Boat Race, on Wednesday, 26 March, was 'fine and warm'; but it was not a pleasant day either for competitors or spectators because of the 'strong westerly wind.' Derby Day, on 4 June, must have been hateful to all present for 'rain fell heavily with little intermission'. The University Cricket Match was spoilt on the first day, 2 July, by 'persistent rain'; and the Eton and Harrow match on the 12th., was reduced to one day because of the weather. The western railways were flooded on the 17th. Nor did the autumn prove any more pleasant. There was a bad fog in October, several gales and lashing rains in November; snowstorms on the 25th.; fogs again in December and a biting frost on the 31st.[4]

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1. Ibid.
2. It was the most sunless May, before that of 1932.
3. A.R.
4. Ibid.

1891 Those who remember with pleasure the glories of the frost and skating of 1891, have probably completely forgotten that the harvest season of that year was, by no means, all that it might have been. In August in Lancashire there were very wet periods, and on the 16th., and 17th., the steady downpour caused inundations in the Darwen valley, when not only was railway traffic stopped, but mill furnaces were swamped.[1] Elsewhere there was serious trouble, as on the Lune at Kirby Lonsdale, where the riverrose sixteen feet above the ordinary level.[2] In Dentdale, Yorkshire, on the 25th., there was the biggest flood for a century. It had rained continuously in sheets, and this, at last, produced a marvellous sight. Flintergill, which is generally dry, was converted into a mass of foam, and such was the force of the torrent, that the noise of the rocks crashing against each other resembled thunder. The farmers were completely cut off from their market at Dent, for there had been more than five inches of rain during a period of thirty consecutive hours. The damage was considerable: vast boulders were hurled into the roads, and fences were swept away. The view of the valley towards Sedbergh was that of a great lake.[3] At almost the same time London was not without its flood troubles though these were partly due to thunderstorms.[4] The Autumn Army manoeuvres in Hampshire were 'brought to a close in consequence of the continued bad weather', on 18 September.

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1. Ibid.
2. C.N.W.Y.
3. Ibid.
4. A.R.

Somersetshire was visited in turn, and on 23 October, perpetual rain swelled the Parret, which burst its banks, and 100,000 acres were submerged. The valleys of the Thames and Kennet sonn exhibited the same features; and these were followed by severe floods on the Ouse, the Nene and the Avon.[1]

1892 The little village of Langtoft on the Yorkshire Wolds seems marked out, if not for overwhelming catastrophe, at least for the maximum of discomfort. On 3 July, 1892, once again a black cloud appeared in its vicinity. This burst, as before, upon the neighbouring hills, and cut its way in channels through the chalk. Theis time the village was flooded even more deeply than in the past, for the depth of the water is said to be eight feet and great damage was done. On the same day, five miles to the south there was a tremendous downpour at Duffield.[2] Later in the year, on 6 October, after a long delayed harvest, the outlying crops in the Midlands and Wales were still further damaged by flood.[3] To compensate for this, if it were possible, there was an abnormally high temperature, almost to the end of the year, but it came too late to help the harrassed farmer.

1893 The records of 1893 show droughts, sunstroke, heat apoplexy, hailstorms, earthquakes and plagues of insects and wasps. In addition, on 20 December, there was a tremendous downpour of rain followed by a long continuance of dry weather into

1894 January, 1894. That year was not a bad year to live in; it might have been worse, and it certainly would have been

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1. Ibid.
2. Nature, 1930. cf. 1388.
3. A.R.

better, if it had not been for the torrents of rain on 12 November, followed four days later by floods which were so excessive that they 'had scarcely been exceeded in the century'.[1] The Avon at Bath rose nine feet; hundreds of acres were under water near Oxford;[2] the river at Reading was six feet above the normal. Windsor was terribly flooded and the Eton boys had to be sent home for ten days. How they blessed Dame Nature or the English Climate. They blessed the one or the other still more heartily in the following year, when they had a glorious opportunity, perhaps the most glorious in their lives, of a long period of skating on flooded meadows.

1895 The great frost of 1895 was followed in May with 'unprecedented dry and hot weather'; and after that, although there were gales, it is not a year that can be condemned for its
1896-7 malignity either in rain or flood. Nor were 1896 or 1897 flood years despite considerable downpours during violent
1898 thunderstorms. Bad floods came again in 1898. February was full of gales; there was nasty weather in March, as shown by the fact that in the Boat Race on the 26th., the Cambridge boat was water-logged after about one hundred yards.[3] The really bad floods, however, were reserved until the late autumn. The inundations in the Lake District, round 2 November, were very serious. In Kendal and neighbourhood there were three inches of rain in three days. At Keswick it was worse for nearly three inches fell in twenty-four hours. At Cockermouth the Derwent rose to the highest point since the great flood of

1. Ibid.
2. R.W.J.
3. C.M.P.

1852; And Lake Windermere reached a record height.[1] To put the character of the year briefly, it may be said that the winter was mild: the summer was hot: but rain fell at Greenwich on 143 days.[2]

1899 January, 1899, opened with rain; on the 12th., it was worse and part of the Chester and Holyhead line was washed away. On and after the 21st., there was rain for three days, causing much damage to property and in the ensuing floods cattle were drowned. The beginning of February was very wet, followed by a cessation for some time. The really great downpour of the year came on 6 September, when during a thunderstorm, an inch of rain fell in half an hour in London, the resultant inundations stopping traffic on the Midland and Metropolitan railways. The year as a whole was much the same as the previous one as rain fell at Greenwich on 142 days.[3]

The outstanding feature, from a rain point of view, in

1900 1900, was the Ilkley Flood, on 12 July, Between 2 and 3. p.m. heavy rain fell on Rombal's Moor; 'every road .... was turned into a water course, torrents many feet deep swept through the town. The lower rooms of some houses were filled almost to the ceilings; furniture was washed into the streets, in which some of the lamp-posts were snapped in half. Some houses collapsed under the weight of the water,[4] or because of the swelling of a beck which ran beneath and caused them to burst upwards. One life, in trying to save others, was lost.[5] From one house thirty tons of boulders and rubbish were removed.

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1. Nature 1930.
2. A.R.
3. Ibid. 4. Nature, 1930. 5. ReW. J.

In a certain part of the town the rainfall of 5.40 in. was registered, the greater part of which fell in a single hour.[1] The sight was staggering; and parts of the town presented a strange spectacle for long afterwards. The flood was attributed to a cloud-burst, which may be so, but there was a severe thunder-storm, taking place at the same time in other parts of the West Riding.[1a] The year, as a whole, was more unpleasant than its two predecessors, for rain fell at Greenwich on 164 days.[2] A contemporary says that the winter was very wet, and that the summer 'was marked by sharp vicissitudes'.[3]

1901 How delightful must have been the beginnings of 1901, when a writer could say on 11 January, 'It is heavenly weather and the sky just lovely today, in between the showers'.[4] But it did not last. The Boat Race was rowed on Saturday, 30 March, 'in a terrific storm of wind and rain'.[5] In Oxford there was rain again in May, particularly at the end.[6] Storms in Derbyshire and Yorkshire on 10 August, produced floods and damaged the harvest.[7] And the year drew to a close with the country under a thick covering of snow.[8]

1902 In 1902, the Boat Race was rowed on Saturday, 22 March, 'in heavy rain',[9] but no great floods took place. In July there was rain, and on the 9th., peculiarly beautiful rainbows and sunset.[10] Apart from a thunder and hail storm in September, the year has not been recorded as in any way very bad for rain. It was, however, in

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1. *Nature*, 1930. 1a. R.W.J.
2. A.R.
3. Ibid.
4. F.Y.P.
5. C.M.P.
6. F.Y.P.
7. *Nature*, 1930.
8. A.R.
9. C.M.P.
10. F.Y-P.

1903 the next year, 1903, that London was to experience record days on 13-15 June, when it rained for 58½ hours. It was never really heavy, but the total amount was 3.44 in., and it was the longest period of continuous rainfall on record in the British Isles.[1] Partly owing to this downpour it was possible to report on 28 October, that 'the rainfall in the London district, since Jan. 1. 1903, has already exceeded the greatest recorded for any completed year during the past half century.[2]

It is not surprising then that it could be stated on

1904 4 February, 1904, 'we are all afloat in the Thames valley, - highest floods for years; road covered; towpath under water; basements .... all awash .... It is better today, but still it looks as if old Noah's days were coming back in spite of the rainbow'.[3] These floods continued at least for a fortnight, and on 25 March, Professor Yuh-Powell again wrote 'I am mending slowly; but regret the lost arm. Yesterday and today, cold, snow, sleet; as it is Boat Race day tomorrow ... bound to be foul weather'. Four days later, he says, 'It is a S.W. wind, soft, showery, sunny today .... my window can be open wide, and I can see the crocuses and the purple distances over the Cherwell'.[4] That April there was heavy rain in the West Riding, at Bradford, on the 14th.[5] Taking the year as a whole, there certainly was enough rain for it fell at Greenwich on 156 days.[6]

19 A wet spring in 1905, with a particularly terrible downpour about Easter in the Isle of Wight,[7] was followed by a cold

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1. *Nature*, 1930.
2. A.R.
3. F.Y-P.
4. Ibid. 5. R.W.J. 6. A.R. 7. R.W.J.

and dry period, and that by an unsettled summer with fine days, and a mild autumn. Comparing it with its immediate predecessors, 1905 might almost be classified as dry.[1] As if to make up for anything that could be called dry, the rain descended

1906 in torrents on 6 January, 1906, and, by flood, caused damage in the Midlands, Gloucestershire and South Wales.[2] Exceptional rain fell in London on 30 June, when 2.07 in., were registered in twenty four hours.[3] The summer was, mainly very fine,[4] but there was a great storm on 2 August, when Guildford was tremendously affected; buildings were wrecked and some lives lost.[5] After very great heat in early September, on the 11th., there was rain followed by a hoar-frost at Greenwich.[6]

Nothing occurred with regard to rain of an exceptional

1907 character until 18 June, 1907, when there was a water-spout at Blanchland, on the eastern edge of the Durham Moors. 'A dense column, like two cones joined at the apices approached very rapidly, with the noise like the engine of a heavy motor car. Near the village it burst and an immense volume of water fell from it, flooding the whole country side; while heavy rain and hail added to the damage. Large stonewalls were broken up and their contents scattered over the fields, while the roads were seriously cut up and in places entirely destroyed.'[7] Throughout this June the national game of cricket was spoilt by rain.[8] There was much destruction by rain in London and in South Wales on 22 July.[9] The weather then improved and the

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1. A.R.
2. Ibid.
3. Ibid.
4. R.W.J.
5. _Nature_, 1930.
6. A.R.
7. _Nature_, 1930.
8. A.R.
9. _Nature_, 1930.

second week in September was bright and sunny; there was not a drop of rain in London until after the 12th., and yet a witness said, in the Camden Town Murder case that it was 'a drizzly foggy morning'.[1] The year ended badly with a gale in the middle of December and heavy floods in the Thames valley.[2] At that time floods round Oxford were very common, so that

1908 after the great snow of 25 April, 1908, the thaw caused serious inundations.[3] The first Saturday in May was fine and hot; but the beginning of June was far from it and torrential rain fell in London and elsewhere on the 3rd., and 4th.[4] In some parts of England from the middle of July to the middle of August there was a drought, but this was restricted to definite localities. A fine September and a mild autumn carried on the year to the heavy snows at the end of December.

1909 It is stated that the year 1909, had more than usual sunshine. This was probably no consolation for the bulk of England's holiday-makers, as there were many wet days in the holiday-months. The University Match ended in a draw on the third day, 7 July, owing to rain. August was distinctly chilly and September 'unusually damp and cold'.[5] On the 28th., there were floods at Neath, Swansea, Aberavon and Ilfracombe. There was very heavy rain in southern England on 26-8 October; at Brighton, 5.48 in., were registered in ninety six hours. There were floods in the Isle of Wight and at Folkestone; and a railway-bridge collapsed on the Tunbridge-Hastings line. There

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1. E.M.H.L.
2. A.R.
3. R.W.J.
4. A.R. 5. Ibid.

may have been an exceptional amount of sunshine but 1909 was not a particularly genial year.

A few remarkable incidents connected with rain occurred
1910 in 1910. The day of the funeral of King Edward VII, 20 May, was marked in parts of Yorkshire by disasters from downpours and inundations. At Driffield and other places in the Wold country there was a cloud-burst that destroyed cattle, poultry and other property. At Thornton-le-dale, in the North Riding, there was the greatest known flood, until it was surpassed on 4 September, 1931. The morning in the village was fine; but higher up the valley, in Staindale, a cloud burst, and the beck, immediately in flood, rushed down, bending trees to the ground, carrying heavy stones in its course, and when it reached the village, swept away the wooden bridges and flooded some of the houses.[1] The next day rain and thunderstorms did damage in other parts.[2] The torrential rain of 9 June, would have been extraordinary in itself had it not been accompanied by a still more astounding and destructive hailstorm.[3] The end of the year, particularly between 4-12 December, was famous for floods in the Thames, the Severn, the Trent, the Cherwell and the Nene.

Few rain storms, though there are some, have ever surpassed
1911 the torrent that fell at Epsom on Derby Day, 31 May, 1911. In fifty minutes, 2.44 in. fell,[4] and the circumstances were made more terrifying by a frightful thunderstorm.[5] This rain-

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1. R.W.J.
2. A.R.
3. _Vide_ Ch. IV.
4. _Nature_, 1930.
5. Vide Ch. III.

fall was eclipsed, proportionately, on 28 July, when in London, about 5. p.m., 1.1 in., fell in fifteen minutes. Then followed an August drought; but the year, for all its fine summer was also marked by a heavy autumn rainfall.[1]

1912 The year 1912, was a classic rain year for many reasons. There was a most curious 'Dark Rain' on 11 March, in east Hampshire and west Sussex.[2] Other districts, though not having such an alarming phenomenon, suffered heavy downpours. In Cheshire and Wales there was very heavy rain on 17 August, and crops were much damaged by flood on the 23rd., in the counties of Lancaster, Derby, Huntingdon and Norfolk. The worst fall, however, in the latter county, came on the 26th., and 27th., when there were 7 in., in Norwich and 8.25 in., at Sprouston. In an area of 1939 square miles, the volume of rain exceeded 150,000,000,000 gallons. No wonder that Norwich was more severely flooded than ever known before, and that numerous bridges were swept away. But Norfolk was not yet to be free, for on 1 October, that county, together with Suffolk, had a downpour of 2in., and floods were renewed throughout a district that had already suffered much. The villainy of the year was completed by numerous floods on 26 December.[3]

It is probable that those who can remember the Bank Holiday
1913 on 4 August, 1913, will think of this year with affection. The weather was fine that day, and the exodus from London was enormous. But previous to that there had been wet patches.

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1. A.R.
2. Vide Ch. III.
3. A.R.

Rain and floods from 9-12 May, and Whitmonday, the 12th., was very dull and showery.[1] The year can hardly be regarded as a great success when one recalls the tempest in South Wales, on 13 October, with its intensely black cloud, its torrential downpour, and its resemblance to an American tornado with its rotary motion.[2]

1914 The years of the Great War were so full of poignant
tragedies that the mere discomforts of rain and flood were
unnoticeable. Possibly reference should be made to the heavy
1915 inundations in the Thames valley on 4 January, 1915; to the
2 in., of rain which fell in an hour and a half in London on
1917 6 May; to the colossal fall in Somersetshire on 28 June 1917.
On that occasion, at Sexey's School, Bruton, it was recorded that 9.56 in., fell mainly between 28 June, 11.p.m. and 1.a.m. on the 29th. This is undoubtedly, the heaviest fall in twenty four hours recorded in the British Isles. At King's School, Bruton, it was 8.48 in. During this storm, 2,340,000,000 tons of water fell on England and Wales. Needless to say the lower parts of Bruton were seriously flooded.[3] No rainfall approaches the above in English records.

1920 The April of 1920 was very wet in Oxford and College
grounds near the Thames were under water for the first week or two of Trinity Term.[4] On 29 May, a rainfall of 4.5 in., took plade at Louth. The river rose sixteen feet in fifteen

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1. Ibid.
2. <u>Nature</u>, 1930.
3. Ibid.
4. R.W.J.

minutes and a torrent 200 yards wide swept through the town. Twenty-two persons were drowned; and the damage wasestimated at £100,000.[1]

1921 As the magnificent and ever to be remembered year 1921 followed, very naturally, there are no rain catastrophes to record, for drought prevailed throughout the country during the greater part of the year.[2]

From that date for ten years our climate and our weather were of the usual English type. We made no pleasant change from Pytheas' account 'a land of clouds and rain' Strabo was right when he wrote of 'a rainy and misty land'; so also was Tacitus, when he said 'the climate is unpleasant with constant
1923 rain'. The June of 1923 was 'the coldest and wettest probably during the last eighty years'. In Lancashire, in November, there were floods; at Sale Priory the water was eleven feet deep; at Clitheroe 300 houses were inundated, and at Bury the Fire Brigade had to be called to pump out the water from several houses.[3] The year, as a whole, was characterised by excess of rainfall, and deficiency of sunshine.[4] In London,
1924 the month of April, 1924, was marked by excessive rain.[5] Severe floods caused much discomfort in Shropshire and Worcestershire on 1 June.[6] Maidenhead was swamped on the 12th.; London had torrential rain on 22 July, and again on the 29th., when some of the railway-stations were flooded.[7] Throughout the

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1. <u>Nature</u>, 1930.
2. A.R.
3. <u>Nature</u>, 1930.
4. A.R.
5. Ibid.
6. Ibid.
7. Ibid.

British Isles there was torrential rain on 19 August; in Somersetshire 8 in., fell in five hours; and 9.40 in., in twenty four hours, which is the second highest record for this country.[1] During the whole month there were twenty two wet days against an average of fourteen.[2] The year as a whole was miserable and sunless, though it is reported to have been healthier than its predecessor.[3]

1925 The Thames once more got out of hand on 1 January, 1925, and on the 3rd., the Severn rose, and many streets in Worcester were flooded. The summer looked promising in a hot June, but during July there were a good many wet days, particularly the 27th., in North Oxfordshire.[4] The year closed in frosts in early December, and many rivers overtopped their banks on the
1926 31st. These floods continued into January, 1926, until a frost held them fast on the 14th. The weather, however, made little improvement, and the Derby was run on 2 June, in the third wet day in succession, and on this occasion, Epsom had a greater downpour than on the two miserable occasions in 1924 and 1925. The rainstorm of 18 July was very fierce; and in London, on 1 September, many houses were flooded. By the end of November the rainfall for the year was the heaviest since 1852; and regarding the year as a whole it may be noted that less sunshine was recorded at Rothamsted than in any previous year since records have been kept.[5]

1927 The year 1927 showed little or no improvement on its predecessor. The Thames valley and the Midland counties were

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1. Nature, 1930.
2. A.R.
3. Ibid.
4. R.W.J.
5. A.R.

much flooded on 28 February. Exceptionally heavy rain fell throughout Eastern England, in some cases 3 in., on 6 July; while on the 11th., railway traffic was disorganised in and near London owing to the downpour. There was continuous rain on, and around, August Bank Holiday; and the 31st., ended a ten weeks extraordinary rainy season which was fifty per cent above the average. It was stated at Rothamsted that, with the exception of 1879, this was the wettest summer within living memory. Towards the end of September, there were prolonged and incessant rains, producing widespread floods and causing extensive damage to crops and live-stock, particularly in the north of England. The town of Fleetwood was flooded owing to a gale, on 28 October, and 400 persons were rendered homeless. In the south, on Christmas day, there was continuous rain. Three days later at Cambridge and Maidstone, the floods were tremendous. The year 1927 might well be described as the wettest of six consecutive years.[1]

1928 The late frost of 1927 was dissipated by widespread and heavy rain on 3 January, 1928. Floods immediately occurred in many parts and Reading, Maidenhead and elsewhere were inundated on the 5th. Southwark and Westminster were awash on the 7th. Snow remained in Hampshire to the end of the month. A very wet and severe gale occurred on 10-12 February. Things improved a little and the month of July was dry and sunny, particularly between the 6th., and 26th. November, however, was bad and very stormy. But the sunshine for 1928 was rather above the average.[2]

1929 It might, even, be said of 1929, that there

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1. Ibid. 2. Ibid.

was a drought period, although it was not all bliss. There was no rain from 22 August to 29 September, in London. Heavy rains fell in the autumn, and on 20 November, South Wales suffered from floods. The month of December was very stormy; there were severe floods in Yorkshire, and on the 12th., there were the worst floods in the Thames area that had occurred for twenty years. The sunshine record, however, for the whole year was the highest for thirty nine years.[1]

One's mind naturally turns to the outstanding rain and
1931 disagreeableness of the year 1931. It would be impossible, in the space available, to record all that happened in that most unpleasant of years. Some few points, however, may be mentioned. On 4 August, the rainfall at Steeple Langford Rectory was 4.49 in.; while on the same day at Wyle Rectory it was 5.10 in.[2] The <u>Morning Post</u> called 1931 'the year with no Summer', and, on 15 August wrote of 'rain and still more rain'. The wettest day in London since 1919, occurred on the 14th. 'July and August together have measured two inches of rain more than the normal'.[3] Floods were common, many parts of the Midlands were under water, and the farmers' losses were enormous. The day of days was 4 September, characterised as 'Britain's Day of Storms'.[4] The Midland Counties, East Anglia, Lincoln, Derby and Yorkshire suffered terribly. The north experienced a deluge which was said to be 'the worst Yorkshire flood in living memory'.[5] Trains were stranded between Whitby and Pickering; and railway services were delayed as far west

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1. Ibid.
2. <u>The Times</u>.
3. <u>The Morning Post</u>.
4. The Y P. <u>cf</u>. 25 May 1910. 5. Ibid.

as Leeds and Sheffield. Some factories in Huddersfield were obliged to cease work. In the East Riding it was almost as bad. At Scarborough, the Cricket Festival 'was washed out'.[1] And in the south the Army manoeuvres were stopped.[2] On the 7th. flood conditions grew worse. Rivers overflowed in all parts, roads were quite impassable, and, as at Malton, railways were idle, as the water was up to the level of the platforms. The loss of crops and stock was heart-rending. At Stamford Bridge, Yorkshire, the flood was the worst known for thirty years, and on eastern parts of the river Derwent it was said to be worse than any since 1878. In Doncaster there were boats in the streets. At Bentley marooned families had to be removed in carts. The mud in the houses and the debris carried to places where it was unwanted caused labour, expense and annoyance. At Simington practically every house in the lower part of the town was flooded. The life-boat was used for rescue operations at Ruswarp, and sustained injury.[3] On the 21st., it was pointed out 'that the River Don, overflowing its banks, flooded 5000 acres, near Doncaster, together with the villages of Bentley and Arksey; and it seems that a further fortnight .... must pass before the water can be got away'.[4] On the other hand the London and North Eastern Railway officials worked with astounding speed, and in a few days had their lines in running order.[5] Yorkshire had had its turn; but on 4 November, Wales, Derbyshire, Lancashire, Cheshire and the Lake

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1. Ibid.
2. Ibid.
3. Ibid. 4. Ibid. 5. _The Times_, 9.9.1931.

District were subjected to severe floods after very heavy rain storms. The Conway valley was a huge lake, ten miles long and two miles broad. Sheep and other live stock were washed through the streets of Kendal; and landslides occurred in the hills in the Patterdale district.[1]

In summing up the year, a writer says 'Like the majority of its recent predecessors 1931 was a wet year - that is to say, the total rainfall .... over the British Isles as a whole was greater than the "normal" value. The excess was 8 per cent., as compared with 15 per cent., in 1930. By recent standards the year was, indeed, comparatively dry, 1930, 1928, 1927, 1924 and 1923 all having been wetter'. That is the kind of information one obtains from statistics, but it does not convey anything of the feelings of the human being. Anyone who was in part of Yorkshire during the first week of September, 1931, despite columns and columns of figures, will always think of the year as terrible.

1. The Daily Telegraph, 5.11.1931.

Chapter VI.

Wind on Land.

North winds send hail, south winds bring rain,
East winds we bewail, west winds blow amain;
North-east is too cold, south-east not too warm,
North-west is too bold, south-west doth no harm.
The north is a noyer to grass of all suites,
The east a destroyer to herb and all fruits;
The south with his showers, refresheth the corn;
The west to all flowers may not be forborne.
The west, as a father, all goodness doth bring;
The east, a forbearer, no manner of thing;
The south, as unkind, draweth sickness too near;
The north, as a friend, maketh all again clear.

Thomas Tusser.

And more inconstant than the wind, who woos
Even now the frozen bosom of the north;
And being angered, puffs away from thence,
Turning his face to the dew-dropping south.

William Shakespeare.

When winter winds are piercing chill
And through the hawthorn blows the gale.

Henry Longfellow.

It is a little difficult to believe that in the London of King Edmund, son of the famous Athelstan, there were 1500
944 houses, in 944. And yet, if the records are true there must

have been many more than these, for it is this number that is given as those destroyed in a hurricane.[1] As nearly all the houses were of wattle, mud and thatch, it would not need a very great wind to cause considerable devastation; but to destroy as many as those recorded meant a wind of a greater violence than that which is sometimes called 'half a gale', and also required a London of a size far larger than it was.

More than a hundred years afterwards a hurricane, worthy of being entered in monastic annals and entitled 'validus'
1080 raged throughout the country on Christmas night, 1080;[2] but
1081 details of destruction are lacking. Exactly a year later, unless the chroniclers confused the two, 'a formidable wind' burst upon the country.[3] The next great wind, called 'out-
1091 rageous', occurred on 17 October, 1091, and 'the violence whereof overturned and rent in pieces above four hundred houses, at which time and tempest the roof of St. Mary-Bow Church in Cheap, was also overthrown, wherewith two men were slain'[4] Astounding tales were told about this roof of St. Mary Bow. It was said to be 'carried a considerable way; and when it fell .... four of its rafters, six and twenty feet long, were forced into the ground above twenty feet deep. To give credit to this relation we are told that London was not then paved, and that the ground was of a moorish nature'.[5] Even allowing for the 'moorish' character of the London streets, it is a little difficult to accept the veracity of a story that

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1. Brit. C.
2. A.M.Marg. & Ber. cf.MS. Digby 81.Bod.Lib.
3. A.M.Win. & Wav.
4. A.S.C. & A.M.Marg.Wav.Ber. & Enl.Hist. and W.of M.
5. Thornton.

seems to convert these massive rafters into Gargantuan javelins, which, with perfect unanimity, hurled themselves through the air and buried themselves to such an extraordinary depth below the surface. Another unroofing incident, on which a great deal more reliance may be placed, occurred in a storm on 10
1092 April, 1092, when the lead of the Tower at Salisbury was torn off, on the fifth day 'after Bishop Osmund had dedicated it'.[1]

Destruction of fruit and crops by wind naturally rivètted the attention of monkish chroniclers, who, were often more interested in the development of the abbey estates than in the
1103 tending of their souls. An unusual wind, on 10 August, 1103, 'did so great harm in the country to all fruits as no man remembered that it ever did before'.[2] But damage was not confined to fruit trees, for houses were sometimes shattered,
1118 as on 21 December, 1118, 'when no man who then lived remembered any greater wind'.[3] And yet it is possible that the 'violent'
1122 wind of 26 March, 1122, was even greater, but there are no details.[4] Or again there are possibilities of extreme violence in a hurricane that raged from 9.a.m., 'to the swart of night', on 8 September, of the same year.[5]
1132 Possibly the wind of 1132 outclassed them all for it is described as 'unheard of'.[6]
1135 With the wind of 27 October, 1135, we have evidences of the destruction of buildings and trees;[7] but no account of the damage done by gales at the end of July,[8] and end of December,

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1. A.M.Marg. & Ber.& F Erwig & Enl.Hist.
2. A.S.C.
3. Ibid.
4. Ibid. 5. Ibid. 6. A.M.Ber. 7. M.P. 8. Enl.Hist.

1177 1177.[1] A startling wind storm burst over the country in the
1207 middle of the night of 27 January, 1207; when, not only were houses destroyed, but cattle also, though the loss of the latter was mainly due to an accompanying snowstorm.[2] House property
1211 again suffered in hurricanes on 21 December, 1211,[3] and on 12
1236 November[4] and 23 December, 1236.[5] A most remarkably destructive
1237 wind was that which began on 22 November, 1237, and continued
1240 for fifteen days.[6] The gale of 8 March, 1240, played the most curious tricks for it picked up stones that a man could not lift, and swept away a pinnacle from a church;[7] and equally
1241 disastrous was the wind which began on 1 January, 1241, and lasted for many days.[8]

A wind '<u>furibundus et iratus</u>', with a terrible bellowing
1252 and impetuous rush, raged on 13 January, 1252. Great oaks were torn up by the roots, particularly at St. Albans, and lead was wrenched from the church.[9] Bitingly cold east and north winds assailed the land continuously for three months up to
1254 the early days of June, 1254, and all the fruits and flowers were 'suffocated'.[10] These blighting blasts came again in the
1255 following February, 1255;[11] and there were 'incomparable'storms
1256 of wind on 19 June, 1256.[12] From the beginning of February to
1258 the end of March, 1258, in the midst of a terrible period of famine, difficulties were intensified by the same kind of gales that had distressed the land so much three years before.[13]

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1. A.M.Wav. & Win.
2. M.P.
3. A.M.Dunst.
4. Holinshed C.
5. M.P. & M.of West.
6. M.P. & A.M.Tewk.
7. M.P.
8. Ibid.
9. Ibid.<u>cf</u>.MS.Digby 81.Bod.Lib.
10. Ibid.
11. Ibid.
12. Ibid.
13. Ibid.

The next wind worthy of note seems to have been on 24 December,
1265 1265,[1] but no details are supplied of destruction. More inform-
1267 ation is given of the gale on 14 January, 1267, when churches,
houses and trees were seriously damaged, and more particularly
the belfry at St. Catherine's, Winchester.[2] This gale had no
1279 rival in fury and intensity until May, 1279 during which a
storm, after tearing up trees and flinging them into the air,
proceeded to crush buildings, smash crosses and lick the water
out of lakes so that they were left dry.[3] Something approach-
1286 ing this is to be found in a gale on 2 May, 1286, when houses
were destroyed, boughs torn off trees and leaves and flowers
1290/3 rent to bits.[4] There were similar violent winds on 18 June,
1290/1300 1290,[5] 25 October, 1292,[6] 15 April, 1293[7] and 20 January 1299/1300.[8]

There 'was a grete wynde on Sent Mawry's daye that dyd
1361 moche harme in many places', on 25 March, 1361.[9] The next
1361/2 January, on the 15th., or 16th., there came 'the grete wynd
out of the southwest fro evensong till mydnyte that blewe
down many a house'.[10] This was a notorious storm throughout
the whole of England, but it was peculiarly violent in the
east.[11] It began about the time of evensong and continued for
six or seven days. It blew down towers, steeples, houses
and chimneys; and the buildings that were not actually thrown
down, were rendered unsafe. It was followed by a very wet
summer and bad harvest.[12] We do not hear of such destruction

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1. A.M.Win.
2. A.M.Win. & Wig.
3. A.M.Dunst.
4. A.M.Wig.
5. Ibid.
6. Ibid.
7. Ibid.
8. Ibid.
9. G.F.L.C.
10. Capgrave C.
11. A.M.Ber. & Wig.
12. <u>Nature</u>, 1930.

1418 again until 13 December, 1418, when 'on Sent Lewys' daye was soche a strange wynde in the north-est that it overturnyd houses, towers, trees'.[1] About twenty years later, on 27
1438/9 January, 1438/9 there was a very great wind 'vocatus South west Wynd', which also overthrew houses and trees.[2] Similar
1439 things happened in the following November, when in addition to other destruction the wind caused thealmost complete demolition 'of the principal part of the buildings in the Old Change, near Cheapside'.[3] And then there was peace in the elements while war raged in the land. At any rate there seems little or nothing about hurricanes until, 'Grete .... wynddes .... dyd
1499 moche harme and hurte', on 28 November, 1499.[4]

A very disastrous tempest that made an impression on the
1505/6 minds of the annalists of the period was on 15 January, 1505/6. On that day 'at twelve of cloke at none rose soche a tempest of wynde tyll it was twelve at mydnyght, that it blewe downe tres and tyles of housys, and that same nyght it blewe downs the weddercoke of Powlles stepulle the lengthe of the ende of Powlles church into the syne of the blacke egylles'.[5] This great gale continued far longer than the Grey Friars Chronicle stated. It had hardly blown itself out by the 26th., when 'Philip, King of Castile and his wife were weather driven, and landed at Falmouth .... as they were passing out of Flanders toward Spaine'.[6] So from this storm, by a somewhat mean trick and lack of honourable hospitality Henry VII. extracted the

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1. G.F.L.C.
2. W.A.15.
3. Thornton.
4. G.F.L.C.
5. Ibid.
6. Stow.

valuable treaty, <u>The Intercursus Malus</u>.

1530 Between 4-5 November, 1530, there 'was gret wyndes'[1]; and these blew down 'many houses and trees'.[2] Fifteen years later,
1545 on 25 June, 1545, there was a repetition, particularly in Derbyshire where churches were unroofed.[3] Of this violent storm Wriothesley writes, there 'was great tempest of winde in Derbieshire, where trees were pulled up, the rootes upwarde and certeine chappelles and churches the heades (? roofs) pulled up and broke, and allso many houses in divers places, and allso in
1549 Cheshire and Lancashire.'[4] Of the storm on 7 April, 1549, there are no details beyond the fact that there was 'a grete and marvelus wynde both in the nyght and also in (the) day'.[5] Another outburst of which more detail would have been interest-
1551 ing was in 1551, when 'in the moneth of June was great tempest of weather and signes in the element sene in many places in England.'[6] Equally bare of information as to the force and destructive capacity of the wind is the statement that there
1555 was 'the great wind' on 30 September, 1555.[7] This was completely
1565 surpassed on 23 December, 1565, when 'beynge Sondaye, at nyghte .... was a greate tempest of wynde wher throghe many persons were drownyd on the Thams and othar placis, and the great gattes at the weste ende of S. Pawls Churche in London, wher is the brasen pilar was blowne wyde open, the wynd beynge in ye west was of suche force'.[8] Not much is to be learnt from the record of 'a great tempest of wynde at mydnyght', on 18

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1. G.F.L.C.
2. <u>Nature</u>, 1930.
3. Ibid.
4. W.C.
5. G.F.L.C.
6. W.C.
7. Holinshed C.
8. C.S.1880.

1583 August 1583.[1]

It would seem that it pleased Dr. John Dee to enter winds in his Diary, but he does not help the future reader by any points that would explain why they were worthy of such entry.
1589/90 On 15 January, 1589/90 there was 'a terrible tempest of wind';
1590 on 15 October, 1590 'this afternoon and all the night following a great storme of wynde at north west'; the same day, next
1591 year, 'after midnyght very wyndy -northerly'; a week later, on the 23rd, 'a storme of wynde'; on 3 December 'wynde'; on
1592 12 May, 1592, 'great wynde at north'.[2] At last Dr. Dee does record a storm that is known to history. On 4-6 September, 1592, he writes, 'very tempestuous' and on the 5th., he says 'The Tems very shallow at London'.[3] Stow tells us that the wind was West and by South 'as it had been for the space of two dayes before, very boysterous, the river Thamis was made so voyd of water, by forcing out the fresh and keeping back the sault, that men in divers places might goe 200 paces over, and then fling a stone to the land'.[4] According to Dr. Dee it was
1593-4 'tempestuous (and) windy' on 28 September, 1593, and on 5 January, 1593/4.[5] On 21 March, there was 'The Great Windy
1594 Thursday';[6] and a few weeks later, on 11 April, there was 'a wind from the north as pearced the walls of houses, were they
1595 never so strong'.[7] The August of 1595 was an unpleasant month, and on the 5th., there was a cold 'wynde north E and W';[8] but none of Dee's winds seem to have caused him grave anxiety.

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1. Dr. J.D.
2. Ibid.
3. Ibid.
4. Stow.
5. Dr. J.D. 6. Cox. 7. Stow. 8. Dr. J.D.

1599 Not so with regard to the hurricane on 23 December, 1599. This was a really alarming storm damaging much house property, but, what was far more serious and calamitous, wrecking the Gravesend tilt-boat whereby nineteen persons were drowned.[1]

Most kinds of weather, including unprecedented frosts, inundations from the sea, and earthquakes, were recorded between 1600 and 1620, but no instance of a really great hurricane has, so far, come to light. There was, however, on Monday,
1622 19 August, 1622, a very strange wind in Devonshire. 'About one of the clock in the morning, the wind arose and blew so vehemently for six hours, that it brake down divers strong trees. It quealed (curled up) all hedges towards the south that they davered (withered) as if they had been scorched by lightning. It spoiled standing corn so, as in many places, it seemed that all the corn (especially barley and oats) had been threshed or beaten out of the husks. By report there is 200l. loss and hurt done to corn in Axmouth (Exmouth) only by the said wind'.[2]

1624/5 Thomas Heywood informs us that the March of 1624/5 came in with 'windy and obstreperous rage'.[3] John Rous records that
1627 the night of 24 November, 1627, was tempestuous and windy,
1627/8 and he gives a little more detail for 27-28 January, 1627/8, when there was a 'wondrous sore winde .... overturning many buildings, barnes and others to the losse of many thousand pounds'.[4] The year was obviously unpleasant. At Nantwich
1628 on 4 April, 'there was a strange whirlwynde that tooke up linan cloths that lay upon the hedges'; and, at the same

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1. Thornton.
2. W.Y.D.
3. Th. Heywood.
4. J.R.D.

place, on 4 November, there was 'a violent wind'.[1]

A storm of some considerable proportions burst upon the
1636 eastern and east Midland counties on 4 November, 1636. It was 'a very sore winde .... in the evening or for part of the night, which overturned many milles, splitte and sunke two barges, and drowned the men as they were to Lynne-ward. It did, questionles, exceeding much harme.'[2] This gale passed over the county of Northampton, 'whereby besides other great Damages done by it, the steeple of Cranford St. John's was broken down a good part of the Church'.[3] On the following
1636/7 16 January, there was 'a violent wind' in Cambridge.[4] Oxford was visited in its turn rather later, when on 27 December,
1639 1639, 'a violent stormy wind hapned and blewe downe the battlements of the new buildings of Laud's Library, but did not break through the lead' on the Old Schools.[5] Three months later, Sir Richard Strode writes 'about Ester be verie bisterous
1640 wether att that time of the yeer, the 31 March, 1640'.[6]

A dramatic storm, full, no doubt, of portent and the prospect of sad happenings, was that at Nottingham on 22 August,
1642 1642, when the King raised his standard, 'but it was blown down .... by a very strong and unruly wind and could not be fixed again in a day or two, till the tempest was allayed'.[7] So the Civil War opened with an event that could only be regarded as unpropitious. And yet, though those who strove in the Civil War suffered from all kinds of weather, statements

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1. Hall.
2. J.R.D.
3. Morton.
4. J.W.D.& C. 5. A.W. 6. Hist.M.SS.Com.29.III. 7.V.M.

as to severe gales are very rare. Apparently there was a
1645/6 storm at Chillingham on 20 January, 1645/6 'the like of which had not been knowne by any now living', but this would appear to be one of the only references.[1] Cromwell's career closed
1658 in a period famous for gales. The year 1658 had at least two stupendously rough storms and possibly a third. Evelyn records of 18 August, that it was the day on which 'that tempestuous wind .... threw down my greatest trees at Sayes Court, and did so much mischief all over England. It continued the whole night, and till three in the afternoon of the next day, in the south west, and destroyed all our winter fruit.'[2] On Monday the 30th., there was another 'verie terrible raging winde which did much hurt especially in tearing tre(es).'[3] Wood says that this was the storm to which people referred when they tried to make out that Oliver Cromwell, on 3 September, 'was hurried away by the Deville'.[4] Wood is very emphatic that there was no hurricane when the Protector died. Mr. Frederick Harrison says that the application of the storm of the 30th. to 3 September was due to party malice. Other storms followed and the memory of man is short. The wind was
1659 high in Oxford on Sunday, 31 July, 1659, 'insomuch that it blew 2 or 3 stones off Carfax tower .... which falling on the leads of the church, a great alarm and outcry was among the people in the church'.[5] In the following March, 'the wind was

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1. Hist. MSS. Com. 29.
2. J.E.D.
3. A.W.
4. Ibid.
5. Ibid.

1659/60 very high and caused great tides'.[1] A terrific storm burst
1660 over Hackness on 8 December, 1660, which 'may be called the great windy Satterday night'.[2]

Just as the colossal storm in 1703 stands out as an astounding event in the reign of Queen Anne, so the tempest
1661/2 of 18 February, 1661/2 was the remarkable meteorological phenomenon in the reign of Charles II. On that day, called 'The windy Tuesday', there was a violent gale, at Manchester, when, says Newcombe, 'it roved ye kitchen end, blew down ye wall. Wee knew not when to be in safety'.[3] Nor was Newcombe alone in his fears. This was a memorable gale throughout the greater part of the kingdom. Pepys illustrates the condition of London, and writes, 'finding by my walking in the streets, which were everywhere full of brick-battes and tyles flung down by the extraordinary wind the last night(such as hath not been in memory before, unless at the death of the late Protector) that it was dangerous to go out of doors, and hearing how several persons had been killed today by the fall of things in the streets, and that the pageant in the Fleet Street is most of it blown down, and hath broke down part of several houses .... and that one, ... a person of quality in Covent Garden, was killed by the fall of the house, in her bed, last night, I sent my boy home to forbid them go forth'.[4] In the West, the city of Hereford also experienced this hurricane on the same day. After a thunder-storm 'followed such an impet-

1. Rugge's Kiurnal.
2. Reg. Hackness.
3. H.N.D.
4. S.P.D.

uous tempest of wind, that I think the like was never known in these parts. It continued till almost noon. There was scarce any safety within doors or without. There is not a church nor a house in this city but hath received some considerable loss. The highways are so full of fallen trees, that travellers can hardly pass'.[1] Dr. Plot says that at Oxford this storm was remarkable in two ways: '1. That though it forced the stones upwards into the cavity of Allhallow's spire, yet it overthrew it not. And 2. That in the morning when there was some abatement of its fury, it was yet so violent, that it laved water out of the river Cherwell, and cast it quite over the bridge at Magdalen College, above the surface of the water, near twenty foot high, which passage, with advantage of holding by the College wall, I had then curiosity to go to see myself, which otherwise, perhaps, I should have as hardly credited, as some other persons now may do'.[2] From this account, although remarkable, it would hardly be gathered that Oxford had suffered any very serious damage, but Wood had left on record the mischances and losses caused by this celebrated hurricane upon the main buildings of the University. Of the Colleges, Queens had five elms torn up: Wadham had three chimney stacks and the battlements blown down: St. John's lost half the battlements over the East Cloister and three chimneys: Exeter only had one chimney blown down, but both crosses on the chapel at the West: pinnacles were broken off at All Souls and Magdalen: at Christ Church all the

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1. K. I.
2. Plot.

fire-stone rails on the west building collapsed, lead was torn from the roof of the Hall, and an elm on the north side of the Great Quadrangle was uprooted. With regard to other buildings, four pinnacles broke through the wainscot ceiling of the Bodleian Library, and most of the west battlements crashed to the ground: the steeple of All Saints Church was seen to rock, but did not fall. Wood concluded his story of the storm by saying there was no harm done in Yorkshire or beyond.[1]

Such a tempest might well be considered quite enough for many a day to come; and, by chance, there was nothing at all worthy of record for some years. There was a violent gale in
1665 Londoh, on 25 October, 1665;[2] and Pepys writes of a 'hideous wind' on 1 November, and 'a windy night' on the 2nd., and 'a foul night for wind' on the 3rd. On the 20th., the weather was worse 'for wind and rayne'. But there was nothing really
1665/6 serious until the great storm of 24 January, 1665/6. Pepys describes it fully. 'Though it was a very foule, windy and rainy morning, yet down to the water-side we went, but no boat could go the storm continued ..... so strong a wind, that in the fields we many times could not carry our bodies against it, but were driven backwards .... It was dangerous to walk the streets, the bricks and tiles falling from the houses that the whole streets were covered with them; and whole chimneys, nay, whole houses in two or three places blowed down. But above all the pales on London-bridge on both sides were blown away,

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1. A.W. _cf_. R.J.D.
2. _Nature_, 1930.

so that we were fain to stoop very low for fear of blowing off
the bridge. We could see no boats on the Thames afloat but
what were broken loose, and carried through the bridge, it being
ebbing tide. And the greatest sight of all was, among the
parcels of ships driven here and there in clusters together,
one was quite overset and lay with her masts all along in the
water and keel above water'.[1] It was in the September of this
1666 year that London was destroyed by fire, and this was made only
too easy on the 3rd., 'by a fierce east wind in a very dry
season'. On the 4th., 'the eastern wind (was) still more
impetuously driving the flames forward'. Is it to be wondered
at that Evelyn wrote 'London was, but is no more'[2] ?

The rest of the September of that year was full of gales,
but exactly of what kind the one on the 17th., can have been,
is a little difficult to say. Wood writes 'all the morning
a grevious and blustering wind: the devill appeared at West-
minster at Whitehall and frighted the gards out of their wits'.[3]
No such apparition appeared when it was 'very windy' on 24
1666/7 January, 1666/7, nor, on Wednesday, 6 March, when there were
'great winds', which were 'moderate' on the 9th.[4] Pepys has
1667 no gales to record for 1667; but another writer refers to a
cold east wind cutting across the Fens on 27 December.[5] The
1668 year 1668, was equally free from windstorms; but in 1669
1669 there was an extraordinary outburst at Ashley on 30 October.
The hurricane 'took a milk-maid's Pail from off her Head and
carry'd it many Scores of Yards Distance. This was the

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1. S.P.D.
2. J.E.D.
3. A.W.
4. S.P.D. 5. J.W.D. & C.

first Assault .... it threw off a Waggon-Body, broke the Wheels and axle-tree in pieces, and blew Three of the Wheels so shatter'd over a Wall'.[1] A similar gale occurred at Bray-
1670 brooke on 10 October, 1670. 'It seems to have been very narrow about 8 yards in Breadth. It stript one Pease-rick, but left another, and uncovered a Malthouse and damaged the
1670/1 Rectory'.[2] The following January, there was at Brampton 'a great storm' on the 24th., 'from the west .... which has greatly shattered the windows and blew down a great part of the
1671 palings of the park'.[3] Evelyn, writing on 13 September, 1671, says, 'This night' was 'a dreadful tempest',[4] but we are obliged to remain ignorant as to how dreadful for he gives no details.

Years went by without any furious winds, and Englishmen must almost have forgotten what a really crashing gale was like.
1682 At last on Wednesday, 31 May, 1682, their eyes and ears were opened in Oxford. 'In the afternoon, about 12 and 1, the day was most prodigiously darkened. A great storme of wind came which was so circular that it blew all the dust in the street up in the aire that you could not see any houses: afterwards followed a smart shore (shower) of raine. A hurricane: this was never known in the memory of man. A prodigious hericane that broke bows (sic) and armes of trees; blew of(f) thatch; and did a great deale of harme in this country'.[5] This storm was sufficiently staggering to cause Robert Harrison to write a pamphlet on it entitled '<u>a strange relation of the sudden tempest at Oxford, May 31, 1682</u>'. The storm seems to

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1. Morton.
2. Ibid.
3. Hist.M.SS.Con.29.III. 4. J.E.D. 5. A.W.

have come merely as a reminder, and a few years again elapsed, without exceptional wind phenomena. The Coronation Day of
1685 James II, 23 April, 1685, however was very windy, so that 'the Canopy caryed over him .... fell', and '2 of the Quarterings of Arrms upon the flagg on the Tower was blown away from the standard'.[1]

1686 The first three days of June, 1686, were very wild. Wood writes of 'a very windy and tempestuous day';[2] and Evelyn says on the 2nd., 'storms, rain and foule weather';[3] and another statement is that the weather 'much incommodes the camp at Hounslow Heath'.[4] But these were not more than tiresome wind storms, and did not approximate to what is meant by the terms
1687 'gales' or 'hurricanes'. It was not until 11-12 May, 1687 that there was anything like these, when Wood says it was 'verie windie and tempestuous'; and Evelyn writes 'This day there was such a storm of wind as had seldom happened, being a sort of hurricane. It kept the flood out of the Thames, so that people went on foot over several places above bridge'.[5] There were great winds when Queen Mary de Modena, or when King
1688 James II fled the country in December, 1688.[6] And there was
1688/9 another wind, of gale force, in Oxford on 22 March, 1688/9, when, in the afternoon, the top of St. Aldates Steeple was
1689 blown down.[7] The wind evidently continued into April, and on the 2nd., Robert Harley wrote 'It has been a terribly stormy time. The Church bell was blown down, but not cracked'.[8]

1689/90 A true gale burst over London, on 10 January, 1689/90.

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1. C.S.Misc.XI. 2. A.W. 3. J.E.D. 4. Hist.MSS.Com.75.
5. J.E.D. 6. M.T.E.of A. <u>cf</u>. Ch.V. 7. A.W.
8. Hist. MSS.Com. 29. III.

'about 40 trees were blown up by the roots in St. James's Park and 20 in Moor fields'.[1] Wood fefers to this when he says, 'a hideous tempestuous wind arose in the South West very many houses shattered, (in London) chimneys blowne downe, some of the stone work of the Temple Chruch blowne downe, the lead blowne up and shrivel'd, several of the elmes in S. James Park blowne up by the roots and some in Moor Fields. This wind began in Oxford about XI of the clock at night. It blew downe battlements at Wadham College and painted windowsof the chapel there; mischief at Gloucester Hall; a stack of chimneys at Magd. Coll. downe'.[2] Twenty persons were killed in London, and the damage to shipping was very considerable.

A violent east wind, as shown elsewhere,[3] played England
1692 a kindly turn in May, 1692. Its force continued into June and on the 9th., there was 'an exceeding great storm of wind and rain .... stripping the trees of their fruit and leaves as if it had been winter'.[4] In Yorkshire, after a dry wet season, on 8 December, there was a hurricane at Cherry Burton, 'which was the day of ye Death of the second squire, about 2 a clocke in ye night was a violent Tempest of wind whc. overthrew ye Chantry Helmes and the Chymnez of ye Lodging parlour of the parsonage house whc. was rectified the July following'.[5] It was probably of this same wind that Wood writes, 'about 2 in the morning arose a dreadful west wind at Oxon. and lasted till about 7 in the morning'.[6] And later in the month, on

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1. Hist.M.SS.Com.75. 2. A.W. 3. <u>vide</u> Ch.VII.
4. J.E.D. 5. Reg. Cherry Burton. 6. A.W.

the 27th., he records an accident owing to this gale. 'Mr. Jennyn, son of the lord of that name, a youth of about 15 years old, in the height of a great storme, would needs go on board a lyter, neare the Savoy; where a gust of wind blew him off, and he catching by the side, another lyter .... dashing against itsqueezed his body to pieces'.[1] This wind lasted as 'a great blustering west wind' doing much mischief, until the 30th.[2]

A peculiar whirlwind manifested itself on 1 August, 1694,
1694 at Wirrington. 'It exerted itself chiefly in the Shocks of Corn .... It took up into the Air about Four Score or a Hundred Shocks[3] of Corn, carry'd many of them out of sight, the rest it scatter'd about the Field, over the Tops of the Houses and Trees which were thereabouts. At least Three of Four Waggon-Load of Corn all at once were whirl'd about in the Air. Some of the Corn was carried a hide distant. It began betwixt One and Two in the Afternoon, and continued in that Close about Half an Hour'.[4] This whirlwind was outclassed by a more wide-spread tempestuous gale on 7 February, 1696/7. 'We had then a most violent Storm, or rather a sort of Hurricane, wch. blew West and N. West; it blew down 2 Barnes at ye parsonage of Donington and did great spoyles on most Towns of England, the Cathedral of St. Chad at Lichfield received great Damage, neare 1000£ loss; 3 young men were killed at Pepperhill by the Falling of Chimneys and many lost their

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1. Ibid.
2. Ibid.
3. Morton may mean Sheaves, not Shocks or Stooks.
4. Morton.

1698/9 lives in other places'.[1] On 7 February, 1698/9, Edward Harley writes from the west of a most violent tempest which 'began here this morning' and has 'done great mischief. Many persons have been killed by the fall of chimneys'[2] and Evelyn records 'a most famous wind' on the 19th, 'such as has not happened for many years doing great damage to houses and trees, by the fall of which several persons were killed'.[3]

These gales continued into the next century. On 19

1700/1 January, 1700/1, a tempest 'blew down above twenty trees .... at Worton';[4] and on 5-6 February, at Donington there were, again, 'great winds and very violent .... wch. did much Damage'.[5]

1701/2 The next year, on 3 February, 1701/2, there was a remarkable storm at Upminster, Essex, which caused the barometer to fall considerably;[6] and, again, at Donington, on Christmas Day, 1702, there were destructive high winds.[7] About the same time a hurricane between Halston and Northampton tore off roofs and 'twisted a maple like a Faggot-band'.[8] In mid-October,

1703 1703, there was a 'great wind' in Northamptonshire;[9] between 11-12 November there were 'high winds' at Upminster; on the 17th., there was a 'violent storm' in Oxfordshire, and in the afternoon of the 25th., again there was a 'high wind' at Upminster.[10] With the knowledge of what ultimately came these may be regarded as merely preparatory.

It would hardly be incorrect to think that all these

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1. Reg. Donington, Salop.
2. Hist. MSS. Com. 29. III.
3. J.E.D.
4. Ibid.
5. Reg. Donington, Salop.
6. Phil. Trans. IV.
7. Reg. Donington, Salop.
8. Morton.
9. Ibid.
10. Phil. Trans. IV.

winds storms, gales and tempests were in no way comparable with the colossal hurricane of Friday and Saturday, 26-7
1703 November, 1703. It has sometimes been called 'Defoe's Great Storm'. Daniel Defoe thought that the storm originated in North America and passed right round the globe. Whatever its origin it had been[1] unequalled by any storms for three hundred years before, and wasnot equalled or surpassed for another one hundred and thirty six years, if indeed then. The tempest proper was[2] confined to south of a line drawn from Pembroke to Yarmouth. Evelyn writes, 'the effects of the hurricane .... through all the nation, especially London, were very dismal. Many houses demolished and people killed. As to my own losses, the subversion of woods and timber, both ornamental and valuable, through my whole estate, andabout my house, the woods crowning the garden-mount, and growing along the park-meadow, the damage to my own dwelling, farms and out-houses, is almost tragical. Not to be paralleled with anything happening in our age. I am not able to discribe it.'[3] But, after all, his personal losses were very trivial, when compared with those of the nation. The Bishop of Bath and Wells[4] and his wife perished at the episcopal palace at Wells by a fall of a stack of chimneys. On the Severn the damage was increased by an unusually high tide; at Bristol the water rose eight feet above the normal;[5] and the damage in that town was £200,000.[6]

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1. _Nature_, 1930.
2. Ibid.
3. J.E.D.
4. Bishop Kidder.
5. _Nature_, 1930.
6. Thornton.

So great was the noise of the wind that it drowned that of the thunder.[1] A water-spout was observed at 4 p.m. near Oxford. In Kent the trees and grass were covered with a deposit of salt twenty five miles from the sea;[2] and in this unfortunate county 17000 trees were torn up.[3] The Eddystone lighthouse, with its designer Henry Winstanley, was destroyed; twelve men-of-war were wrecked, and 1800 seamen were drowned. All the ships in the Thames, except four, were driven from their moorings, and sixty barges, crashed against London Bridge. Houses were stripped of their roofs, and tiles immediately rose in price from thirty shillings to £6.0.0 per thousand. Brick layers were not to be procured under five shillings a day. For weeks houses had to be protected by sail cloths and tarpaulins. The total damage in London was estimated at £2,000,000.[4] A contemporary says 'There has been so Tempestious A night that we ware all afraide that the house wod have bin blon down apon us'. Another writes 'I bles God we have Escaped with our lives but our hous is much damieged ... we got out into the church porch and stood ther for som hours expecting every moment to see the hous fall.' A third tells Lord Fermanagh that London 'is most dismally shattered .... our Square looks as if it had been bombarded'. A Mr. Palmer of Lathchelsea says 'I bless God we are all pretty well and safe in my house, not a tile missing but part of my wall next the street downe. This Miserable towne makes a dismall

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1. Nature, 1930.
2. Ibid.
3. Thornton.
4. H.D.D. & Thornton & Reg. St. Marys, Cambridge, & Reg. St. oswald, Durham & G.M.

sight, abundance of people killed'.[1] Well might Defoe write

'I trembled as the Winds grew high
And so did many a braver Man than I.

An interesting though somewhat peculiarly spelt letter on the subject of the storm was sent by Lady Rachel Russell on Tuesday, 30 November to her daughter Lady Granby; 'I have bin under great axietie to, tel the post came yesterday, for tho' Belvoir is so strong a biulding I feared accedents ther as little as any where, yet so many fatal and dismal ones have fallen upon so many that wod justifie a mighty aprehension. I blesse God we are al wel but the chimnay where my son and his wife lay fel and the bricks and soot coming downe the chimney made them rise at six a clock and come to my drawing roome. The wal of the garden fel next the field, and al the trees be at one side to the very ground, but at Straton my losse is worse in all respects ... corn and hay dispersed ... the fir grove ... intirly broke and tore up by the roots .... Hampshire is al desolation. Devonshire House escaped better than any house. I heare of many kiled in country as wel as in towne. Lady Penelopie Nicklesse (Nicholas) kild in her bed ... and he in the same bed saved, a piece of tumber faling betweene his legs, and keept of the bricks; but tis inummerable the michiefs and the preservations'.[2] All other wind storms fade into insignificance when compared with this, of which Addison wrote, illustrating Marlborough's impetuosity at Blenheim by means of the famous gale: -

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1. V.L.
2. Hist. MSS.Com.24.II.

So when our Angel by divine command
With rising tempests shakes a guilty land,
Such as of late o'er pale Britannia past,
Calm and serene he drives the furious blast;
And pleas'd th'Almighty's orders to perform,
Rides in the whirl-wind, and directs the storm.

1704 In May, 1704, in the county of Northampton there was another of those rare winds that actually blight the foliage. 'In the valley betweixt Colesbrook and Hanging Haughton .... the Ashes there were blasted, their Leaves look'd as Black as Ink'.[1] On 17-18 May, 1705, there was something of the same kind. During the first weeks in May the air was thick with mist and then came 'a remarkable Blast', from the east which is 'vulgarly called a Red Wind', which turned the young leaves of the trees black and caused them to shrivel. 'Particularly Ashes, Willows, Elms and Walnuts'. 'The Young Beech-Hedges growing upon the Grand Reservoire at Boughton, in that extensive Blast that happened .... were turned Red, not blacken'd. But the Hop in some places were chang'd to a Sooty Colour by
1705 that Blast'.[2] On August 10, 1705, according to Robert Price at Exeter, 'we had such a hurricane here that it was next to the great wind (1703) and lasted 5 or 6 hours. God send good news from sea'[3]; and on 5 December members of the Verney family were 'affrighted all day with violent high winds and storms'.[4] Neither of these winds however, seem to have had

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1. Morton.
2. Ibid.
3. Hist.MSS.Com.29.IV.
4. V.L.

the terrors of that of 1703 or the disagreeable attributes of that of 1704. Another wind recorded by the Verney family
1712 on 18 November, 1712 and apparently otherwise forgotten, was when in Buckinghamshire 'the high winds on Sunday night blew down severall firr trees in the Elm Grove, which brake down a Palaing and lett the Deare in to the Grove, and the Trees are so heavy that we cannot Stirr Em .... There is alsoe one Grt Firr Tree downe just between the Great and Smal Gates of the Grove. This high wind did also frighten our women ... it hath blown down abundance of my Tyleing and a chimney in the Grounds'.[1] Jonathan Swift has not much to say about the wind, but he refers to one storm that must have been severe.
1712/3 Writing on 25 January, 1712/3, he says, 'we had such a terrible storm today that going to Lord Bolingbroke's I saw a hundred tiles fall down, and one swinger fell about forty yards before me, that would have killed a horse .... a tin chimney pot had fallen down with a hundred bricks.' But this storm wasnot of outstanding character, as it was of very short duration, and it was calm again by the evening.[2] A year later, on
1713/4 Tuesday, 1 February, 1713/4, there was 'a great hurricane which did blow down many barnes and trees and some houses. 'Tis credibly reported that above 200 barnes were blown down in Cheshire'.[3] In Yorkshire it also did great damage and 'blew down some yards of the stone-wall of Wakefield steeple and

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1. V.L.
2. J.S.J.S.
3. L.G.L.C.

the Wethercocke'.[1] Two years to the very day,, there was
1715/6 another outburst on 1 February, 1715/6. On this occasion it is called, 'an extreme wind', and it tore across Chapel-en-le-Frith, where 'it blew the weathercock off the steeple and brake it in pieces and a great Ash down in the Churchyard with vast great loss to most people in their houses some being blowne downe'.[2]

1716 In September, 1716, the wind once again affected the tide in the Thames. So strong was the west south west wind on the 14th., that the tide was prevented from coming into the Thames for twenty four hours, so that there was only a narrow channel some ten yards wide; and so shallow that thousands of persons passed across on foot under the arches of
1717 London Bridge.[3] There was a big storm in August, 1717, and on the 30th., Dr. Stratford writing of Oxford says 'we had some ill effects of the storm here: we lost two trees in our long walk (Christ Church). I hope you (Lord Harley) have lost none in the beautiful avenue of your house.'[4]

London and the south of England were visited by a torn-
1734/5 ado between 11. a.m. and 5. p.m. on 8 January, 1734/5, which was said to have had some resemblance to the great storm of 1703. Houses and windows were shattered; thirty six trees were laid flat in St James's Park; 360 fell in the parish of Stockton, Wiltshire; 100 in the paddock of the Duke of Queensbury at Amesbury; 80 in St. Piers Walk, Monmouthshire.

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1. J.W.W.
2. Reg. Chapel-en-le-Frith.
3. Nature, 1930.
4. Hist.MSS.Com.29.VII.

Damage to the extent of £2000 was done to the fine grotto and Park wall of Mr. Scawen at Carshalton, Surrey. There were many wrecks;[1] 'but we must not omit the good occasioned by this dreadful tempest to the harbour of Wisbech, which is deepened .... to above fifteen feet of water, so that ships come up to the town.'[2]

A furious blast burst over Bath, Bristol, and other places
1738/9 in the West on 4 January, 1738/9.[3] In September, 1739, there
1739 were gales in most parts;[4] and at the end of the year, 'a very high' wind caused much damage to the frozen shipping[5] in the Thames.[6] Cold north easters continued to blow through April and May.[7] But the great hurricane of the period, on land and
1740 sea, was on 1 November, 1740. A Boarding Scool at Kensington was destroyed and its occupants killed. One of the spires of Westminster Abbey was blown down, also part of the wall of Hyde Park, between Kensington and Hyde Park Corner. A house collapsed in Hollis Street, Cavendish Square; two chimneys fell at the Blue-coat Hospital; 'in short a greater desolation has not been known for many years'.[8] If the above assertion were true, it was soon to be surpassed by a far greater and more general
1741 hurricane on 8 September, 1741. 'A prodigious' south west wind passed over London about 11 a.m. and stripped the roofs of tiles and chimneys. At Canterbury not only chimneys fell, but large trees were uprooted. The wind was very violent at Stevenage and Baldock. At Biggleswade it threw down malt houses, barns and trees; and at Huntingdon several windmills were overturned and one miller was killed. A letter writer

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1. vide Ch. VII. cf. A.W.D.,& Hist.MSS.Com.42.
2. Brit.C. 3. Ibid. 4. Ibid. 5. vide ch.I. 6. Thornton & Hist.MSS.Com.38. 7. G.W.I.VIII. 8. Brit.C.

says, 'I never saw such desolation in my life as here at St. Ives', and well he might, for houses were damaged, the steeple of the Church was blown down and sheets of lead were rolled up like paper. In some places, after creating this 'desolation' the storm passed away in twenty minutes.[1]

It has already been shown with what difficulties, caused by snow and rain, John Wesley had to contend in his perambulations of the country. With the same brave spirit he had, on occasions, to fight against blustering gales. In the neigh-
1741/2 bourhood of Chippenham, he writes on Friday, 5 February, 1741/2, 'the weather being so extremely rough and boisterous that I had much ado to sit my horse'.[2] So, too, on Monday, 27 December,
1742 1742, at Horseley, 'so furious storm have I seldom known. The wind drove upon us like a torrent; coming by turns from east, west, north and south: the straw and thatch flew round my head'. Two days later, at Leigh, he says, 'more than once I was only not blown off my horse, ... a large room rocked to and fro with the violence of the storm'.[3] On Good Friday, 1 April,
1743 1743, at Placey, near Newcastle, 'the north wind being unusually high drove the sleet in our face'; and on Saturday, 22 October, at Grimsby, there were 'very high winds'.[4] A cold north-easter
1745 'exceeding sharp' cut him to the bone on 17 April, 1745, on his way, once again, to Grimsby. At Grantham, on Wednesday,
1746/7 18 January, 1746/7, 'the north east wind was piercing as a sword';[5]
1747 and on Tuesday, 1 December, 1747, on the way to Salisbury, 'It blew such a hurricane as I have scarce known

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1. Ibid. <u>cf</u>. Thornton.
2. J.W.J.
3. Ibid.
4. Ibid.
5. <u>vide</u> ch. I.

in England, and that full in our teeth, so that our horses reeled to and fro, and had much ado to keep their feet.'[1] This storm, to which Wesley referred, was general.[2] Considerable damage was done in London; trees were blown down in St. Janes's Park; boats were wrecked on the Thames and ships were lost at sea.[3] Similar gales continued into the next year. The wind was too strong to make a safe crossing from New Passage to

1747/8 Ireland on Tuesday, 16 February, 1747/8; and there was a violent hurricane at Holyhead on Tuesday, 8 March. The year closed with a series of gales. On 16 December, there was a terrible hurricane from the south west, that was remembered for years. It lasted for eight hours and damaged property in London and caused death by land and sea.[4] Wesley had another rough experience, something like his previous ones, on Friday,

1749 29 September, 1749, at Whitehaven. 'The storm was exceeding high and drove full in my face so that it was not without difficulty, I could sit my horse'.[5]

While most of the kingdom were experiencing the earthquake

1749/50 on 8 February, 1749/50, Bristol was undergoing a terrific hurricane. Houses were much damaged, and several sheets of lead were blown from the steeple of the church of St. Nicholas; two persons were buried in debris but rescued.[6] Bristol again experienced 'high wind' on Monday, 20 March; and a 'roaring wind' four days later;[7] and 'a vehement'storm on the 30th.

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1. J.W.J.
2. Brit.C.
3. <u>vide</u> ch. VII.
4. Brit.C.
5. J.W.J. 6. Ibid. 7. J.W.J.

1750/1 At Oxford, on 26 February, 1750/1, the high wind so damaged the spire of St. Mary's church that it was expected to fall. This was the precursor of very violent storms throughout the kingdom.[1] During Wesley's tour in Cornwall, at the
1751 beginning of September, 1751, he was 'buffetted'; and he had to put up with it blowing 'hard'. But these were, after all, normal winds; and it is of a very different kind that he writes
1752 on Sunday, 15 March, 1752, and which he calls 'one of the most violent storms I ever remember .... a house opposite the chapel was blown down .... the tiles were rattling from the houses on both sides.'[2] This storm raged throughout Middlesex, Surrey and Kent. In London there was considerable destruction; an ale-house was beaten down in St. James's Street; the west window of Westminster Abbey was shattered; several hundred weight of lead was torn off Chelsea Hospital; a large part of the wall of King's Bench Prison collapsed under the strain; and hundreds of trees were uprooted. One life at least was lost.[3] This storm was equally furious at Guildford, Leatherhead, and Norwich.[4] It continued for some days, thus on Tuesday, the 17th., on Broadway Hill, the 'vehement wind' often drove Wesley 'clean out of the path and was ready to carry away both hor e and rider',[5] which any reader can well understand if they have ever had the misfortune to be at the top of that famous hill during a gale.

For the next year or two there were no abnormal storms.
1753 During April, 1753, there were high winds especially in the

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1. Brit.C.
2. J.W.J.
3. Brit.C.
4. Ibid. 5. J.W.J.

Sunderland and Newcastle districts at the end of the month. 'The wind was high and piercing cold', at Hayes on Wednesday, 14 Novemmber. There was wind at Stanley on Wednesday, 3

1755 April, 1755; and during the same year 'a keen north wind' at Sheephill, on 24 May;[1] and a 'violent wind' at Falmouth on Tuesday, 2 September. The next great tempest was on 3 October,

1756 1756, and it was confined to north of the Trent. The church at Penrith was damaged and there was hardly a house in the town that excaped injury. Newcastle and Sunderland suffered once again, but mainly from loss of shipping[2] rather than loss of property ashore.[3]

1757 The year 1757, was celebrated for winds. On 25 January, 'above 20 feet of the upper part of the spire of Lostwithiel Church, Cornwall, were thrown down and dispersed in all directions for 200 yards'. The vane was much bruised and the socket rent open, 'as if it had been burst by gunpowder and in such a manner as could not well be occasioned by the fall'.[4] The really terrible day, all over England, was 15 March. London suffered much; large trees were torn down at Cambridge; two persons were killed at Bedford; many houses and chimneys were blown down at Chester, together with windmills and trees.[5] But the greatest damage was at Worcester, where ' a violent west wind blew down a stack of chimneys from the south wing of the guildhall .... which fell upon the roof of the Nisi Prius bar, whilst the court was sitting, broke through the ceiling, and killed six men on the spot, who were buried in the ruins;

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1. Ibid.
2. vide ch. VII.
3. Brit.C.
4. Nature, 1930.
5. Brit.C.

many others were terribly bruised. Sir John Eardley-Wilmot, the judge then presiding, with great difficulty escaped unhurt.'[1] At Nantwich, 'Aft noon, the upper part of the Steeple was by the excessive violence of the wind or Tempest suddenly blown down & falling upon ye roof of ye church broke it entirely, and destroyed most of the Pews and a gallery erected therin at the West End'.[2] At Liverpool 'the upper part of the high spire of the church (of St. Thomas) was blown down'.[3] The violence of the storm did not end in this month. April proved as windy. On the 12th., there was a 'furious wind', at Bedford. In Cheshire on the 19th., there was 'such a violent wind as was ready to bear us off our horses.'[4]

Another instance of a blighting wind is recorded by Wesley, in the neighbourhood of Whitehaven, on 25 May, 'Hedges and shrubs', he writes, without a green leaf upon them, but abundance of trees likewise naked as in the depth of winter. Upon inquiry, I found, that sometime before, a violent wind had gone through all these parts, which not only threw down chimneys, walls and barns, and tore up trees by the roots, but scorched every green thing it touched as with fire, so that all the leaves immediately fell off, and not only bushes and fruit trees, but elms, oaks and firs withered away to the roots.'[5] Wesley found another example of this kind of wind at Cambourn. I observed', he said, 'more and more the effects of that

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1. Green.
2. Hall.
3. J.W.J.
4. Ibid.
5. Ibid.

burning wind which was in these parts on Sunday, the 28th.' of July. 'It not only scorched all the leaves of the trees, so as to bring mid-winter upon them in two hours, but bunt up all the leaves of the potatoes and cabbages, and every green thing it touched'.[1]

The next gale in London that can be classified as 'great'
1760 does not seem to have been until 15 February, 1760. This tempest was not confined to the metropolis, for it did incredible damage in most parts of the kingdom. In London, amongst much other destruction, one of the pinnacles of a building adjacent to the House of Commons, broke through the room above the Speaker's Chamber. The Mall was covered with branches; and lead was nipped from the roof of the Admiralty. In the country many cottages, ricks, and stacks were destroyed, and on the coast there were many shipping disasters.[2] The month of March proved one of gales; on the 13th., at Manchester, there was a 'furious wind', and on the 25th., in North Wales, the wind was 'often ready to bear away both man and horse'.[3] September was also an unusually stormy month. On Wednesday, the 10th., at St. Ives, there was a 'high north wind'; on Tuesday, the 16th., at St. Just, 'all the day it blew a storm and in the evening .... the furious wind continued'; on Saturday, the 27th., at Saltash, there was 'high wind and heavy rain.'[4] And so Wesley battled on, as shown in, what might be called, a record cold blast on Saturday, 17 January, 1761,

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1. Ibid.
2. Brit.C. & Thornton.
3. J.W.J.
4. Ibid.

1761 when he writes, 'I never before felt so piercing a wind .... To think of looking up was a vain thing; I knew not whether I should not lose one of my eyes'.[1]

1762 There were similar high winds in January, 1762; and on Tuesday, the 12th., there was a violent storm in London, whereby chimneys were sent flying and 'the river Thames rose so high that the gardens at Millbank, Westminster, were laid under water.'[2] In the following February there was one of those tiresome wind-frolics which must have presented many regrettable incidents. On the 21st., there was a tempest, for two hours: 'chairs were blown to pieces, the streets covered with tassels and glasses and tiles, coaches and chariots were filled like reservoirs.' Houses were unroofed. 'It is' says Walpole 'a week of wonders and worthy the note of an almanac maker'.[3] Again in Yorkshire, on 1 December, there was a furious hurricane which raged in York from 9 a.m. to 9 p.m. on the following night. It blew down the weathercock and part of the battlements at the west end of the Minster, and seriously damaged several houses in the city.[4]

1763 The thunder-storm of 19 August, 1763, in London and the Southern Counties was, amongst other things, celebrated for the force of the gale which accompanied it. At Twickenham and Reading large trees were uprooted; and, in the latter, several persons were struck to the ground, and if not physically hurt, were, at least, terribly alarmed.[5] London again suffered on

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1. Ibid.
2. Thornton.
3. H.W.L.
4. H.S.
5. Thornton.

2 December, when houses were shattered and some persons were killed and others injured. 'The streets, during the violence of the storm, were rendered impassable; parts of the walls of Hyde Park and Sadlers Wells gave way.' Trees were blown down, ships were wrecked and the Thames overflowed its banks.[1] Further references to high winds occur frequently in Wesley's Journal for the months of January, February, and March both

1764,1765 in 1764 and 1765; but the later months of each year were more sultry and rainy than windy. There were 'piercing winds'

1766 and 'exceeding sharp' winds in March, April and May, 1766; but the winter of the latter, was calm and mild.

Probably the most extensive wind storm, in proportion to the length of time it endured was at 10.15 p.m. on 1 January,

1767 1767. The evening 'had been bright star-light and .... serene'; suddenly it changed, and, in an instant, a burst of wind was heard. Gables and chimneys bowed down before it. The ships in the Thames crashed amongst each other; twenty-seven lives were lost; damage to the value of £50,000 was done - and all in exactly two minutes.[2] It is inconceivable that this type of wind record has ever been surpassed in this country.

Just as London suffered from a severe storm on 19 August,

1773 1763, so the same thing occurred on the same day in 1773. It is described by a contemporary, somewhat baldly, as a 'violent storm of wind and rain'. An old house at the corner of Dobbs Courth, Southwark was blown down, and a woman and two

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1. Ibid.
2. Ibid.

children were buried. Two customs officers, a lighterman and his apprentice were drowned at Gravesend. A roof of a house in Shoe Lane, Fleet Street, and a new brick wall in King's Bench Walk, in the Temple, were destroyed.[1] Such were some of the disastrous results of the storm; the rain that accompanied it caused many others.[2] On the Lancashire and Yorkshire borders there were 'high' winds and 'sharp' winds in April,
1774 1774; and at Barnard Castle on Tuesday, 14 June, there was a wind which was both 'high' and 'sharp';[3] but the weather, as a whole, that year was inclement rather than tempestuous.

1778 The night of 31 December, 1778, must have been unpleasant. 'We had', says Wesley, 'a violent storm at night. The roaring of the wind was like thunder'.[4] This was an historic storm,
1779 for it was carried on into 1 January, 1779, when London experienced one of the worst gales ever known. Hardly a public building escaped without some damage. It was of this that Walpole wrote, 'I hope you have not been untild or impaled by this tempest on New Year's morning. I have lost two beautiful elms in a row before my window here, and had the skylight demolished in town. Lady Pomfret's Gothic house, in my street, lost one of the stone towers, like those at King's Chapel, and it was beaten through the roof. The top of one cross, too, at Ampthill was thrown down.'[5] In another letter he says 'but the greatest ruin is at my nephew Diparts' at Ham, where five-and-thirty of the old elms are blown down.

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1. Ibid.
2. _vide_ ch. VI.
3. J.W.J.
4. Ibid.
5. H.W.L.

I think it no loss, as I hope, now, we shall see the river from the house'.[1] The storm also did damage elsewhere for it is recorded that the Beacon on the church at Monken Hadley was destroyed.[2] The tempest was repeated on Sunday, 21 March, when 'began such a storm as that which ushered in the year'.[3] But nothing like this came again in a summer celebrated for heat.

1780 On Thursday, 16 March, 1780, 'the wind was high and exceeding sharp' at Bewdley; on Sunday, 9 April, at Bristol, 'the north-east wind whistled round about'; and on the 17th., at Leeds it was 'rough'.[4] Walpole records on 6 June, a 'bitter east wind' and says, 'our free-born weather, that on Monday and Friday was as hot as Lord George (Gordon), is now as cold as the Duke of Devonshire'.[5] Throughout the month it was windy; and, on 16 August, Walpole complains, 'my own little landscape is brown and parched; a sultry east wind has reigned for eight and twenty days and left us neither grass nor leaves'.[6] This reads like one of the strange and blighting winds to which occasional reverences have been made.

Wesley refers from time to time to cold, piercing, harsh and sharp winds, but no hurricane seems to have swept England
1791 for many years. There were some wild storms in February, 1791 and on Monday, the 7th., Walpole writes 'one of our numerous tempests threw down Mrs. Damer's chimney, last week, and it fell through her workshop;[7] but, fortunately touched none of her own works'.[8] It was not, as far as inland storms were concerned, that there was anything worthy of record until 8

1. Ibid.
2. C G.H.M & G.R.
3. J.W.J. 4. Ibid. 5. H.W.L. 6. Ibid. 7. Where she executed her sculpture. 8. H.W.L.

1800 November, 1800, when a gale raged throughout the kingdom, and there was much damage particularly in London.[1] In this hideous storm, which combined hail, snow and wind, six horses in the coach at Stilton refused to (or could not) move forward for more than an hour.[2]

1803 The early months of 1803 were somewhat rough and stormy. On 10 January, a violent wind at Paddington drove a chimney on to a house with such disastrous results, as to bury the occupants, who were ultimately rescued alive. Storms followed on the coast; and on 27 February, a gale blew away part of the Royal Standard at Windsor Castle. On Christmas day a worse storm invaded London, during the general festivities, and clouded some of them. Chimneys and tiles were scattered in all directions; in some cases persons were killed or injured. Almost every unfinished building along the Sussex coast was levelled to the ground; and a very considerable part of the ancient wall which surrounded the park at Canonbury was destroyed.[3]
1804 There were heavy gales in the autumn of 1804, and Thomas Grenville writing from Castle Howard, Yorkshire to Lord Grenville says on 23 September 'I find with the equinox, the winds and storms ... decidedly pronounce against any more northern projects for this year.'[4] Gales occurred in
1805 October, 1805, and one, which can well be called a hurricane tore through Plymouth on the 25th., when many people were blown off their feet, and one man was hurled into the Tamar and drowned. A fierce wind raged at Loughborough at 2.a.m.

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1. H.D.D.
2. C.G.H.M & G.R.
3. A.R.
4. Hist.MSS.Com. 30.VII.

1806 on 10 January, 1806, when part of a brewery was unroofed, and such was the appalling roar of the wind that it was impossible to ascertain whether there was thunder at the same time. A week later there was another storm at Plymouth and in London, losses being sustained in both.[1] Plymouth once again suffered from 'the most tremendous storm of the season' on 2 November.[2]

1809 There was a 'hurricane' in London, on 29 January, 1809, in which one life was lost by the fall of a tile. The next day this storm passed westward; and at Portsmouth, such was the power of the wind that it lifted a piece of lead weighing thirty hundred weight.[3] At this period the wind seemed inclined to play strange tricks with lead for on 10 November,

1810 1810, one of the leaden Muses onthe roof of the Clarendon Buildings, Oxford, was blown down. A contemporary versifier wrote,

'Look out Oxonians, one and all
For here the Muses are of lead,
And when such heavy ladies fall
'Tis time for each to <u>mind his head</u>'[4]

Another wind, or rather as it has well been called 'tornado'

1811 played strange tricks inDerbyshire, on 12 May, 1811, about 5 p.m. At Bonsall, in the Peak district, there was a curious cloud of serpentine shape. Then a gale, which uprooted large ash trees carrying them twenty and thirty yards, twisted the tops from other trees carrying them fifty to one hundred yards.

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1. A.R.
2. Ibid.
3. Ibid.
4. G.V.C.

Cows were lifted from one field to another and injured by the fall. The hurricane was about five or six miles long and five hundred yards wide.[1]

1814 December, 1814, was famous for storms of wind. Between the 16th., and 17th., a gale raged in the north of England, and at Bradford Moor a mill-chimney crashed on to the roof of the factory injuring many of the hands. At Stafford the wind was said to be the worst in the memory of man, which is not surprising as 'innumerable' chimneys were blown down and the roads were blocked by fallen trees. Part of Jarrow Church was unroofed; many chimney pots fell in Durham; and hardly a house was undamaged in North Shields.[2] All round the coast it was equally severe.[3]

In London and in the neighbourhood of Walthamstow, together
1819 with snow, there was a violent hurricane on 23 October, 1819, which uprooted trees and blew off tiles.[4] But this was local,
1821 whereas the great gale of November, 1821, swept from Durham to Cornwall.[5] The flow of the Thames was once again affected on
1822 6 March, 1822, by 'the south west wind blowing with great violence', and so 'obstructed the progress of the tide for some hours, and several islands were formed between London and Southwark bridges'.[6] The next day was a very windy one in Staffordshire.[7] On the 22nd at 5 a.m. a tempest churned the Thames into foam and stript many houses of tiles and chimneys.[8]

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1. *Nature*, 1930.
2. A.R.
3. *vide* ch. VII.
4. A.R.
5. H.D.D.
6. H.S.
7. W.D.D.
8. A.R.

Hurricanes or tornados on land seem to have been rare for
1827 some years. On 31 March, 1827, however, the wind was so boisterous that there was no hunting in parts of Yorkshire;[1]
1831 and again on 12 October, 1831, a storm burst over Brentwood, Essex by which branches were torn off trees, and 'lofty oaks' were 'struck near their summits' London was once more visited,
1833 on 2 June, 1833, b y one of the greatest hurricanes ever known to have taken place in that month. Lambeth was strewn with tiles and chimney-pots; boats were wrecked on the Thames and lives were lost. A woman was blown into the Paddington Canal; two girls were crushed by the force of a tree in Hyde Park. Plantations of young fruittrees were 'prostrated to the ground'. As far north as Liverpool the wind was very violent, and, there, it must have been of the blighting type, as the leaves were brown and withered and had all the appearance of autumn.[2] Liverpool was again attacked on 19 November, when the wind tore down the palisading of the Zoo, blew off coping stones from houses, damaged the weathercock of St. George's Church, and caused several wrecks in the Mersey. London was destined to suffer again before the year concluded. On 31 December, about noon it became very dark, when a violent wind and torrents of rain fell upon the city; the chief damage being confined to the unfortunate bargemen on the Thames.[3]

A most exceptional tornado burst on the little village of
1837 Kilburn, near Thirsk, on 6 October, 1837, 'destroying everything

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1. T & K.
2. A.R.
3. Ibid.

that obstructed its réckless career'. Trees were uprooted; 'haystacks riven by the middle'; quick-set hedges torn out; hundreds of sheaves whirled into the air and carried out of the field; and the turnip and potatoe crops were ruined. The whole time that this amazing tempest continued, the roar of the wind was terrifying.[1] Another storm that must have closely resembled that at Kilburn occurred in the middle of
1838 April, 1838, in Staffordshire, when the young wheat was torn out of the ground. A few months later on 28 October, a storm passed over the south of England which 'has seldom been exceed - ed in violence or in the number of accidents'. In London, where the wind was really terrific, there was no loss of life; but in the West of England, twenty one men were drowned in the Bristol Channel. On the Surrey-side of the Thames five houses were completely shattered. It was during this gale that a most curious thing is said to have happened on the Great Western Railway. Two carriages were found, on the 29th., at Slough, and two at Wormwood Scrubs, both sets 'having been carried by the wind to those distances from Maidenhead'.[2] Can this be accepted as absolute truth?

No storm had as yet approached the extreme violence of the famous hurricane of November, 1703. On 6-7 January,
1839 1839, however, a tempest swept the country of such a force that it has generally been regarded as the worst since 1703.[3] The gale was from the North west and began in London, on

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1. H.S.
2. A.R.
3. Nature, 1930.

Sunday at 11 p.m., and raged till abour 6.a.m., on Monday. It is most remarkable that in the metropolis there were no personal injuries. This was not the case in Liverpool, where the wind was south east shifting to north west 'with extraordinary fury'. The streets were soon covered with stones, slates, bricks and other debris. One gust blew down the wall of Kirkdale gaol, the wall of a Wesleyan Chapel, the iron palings of St. James's churchyard, and a portion of a cotton factory. There was much loss of shipping and the total damage was estimated at £1,000,000. In and near Liverpool the death roll was as high as one hundred. At Manchester the storm reached its climax about 2.a.m. on Monday. Chimneys, lead and slates were torn off; several houses completely collapsed; and some lives were lost, mainly in Salford. The destruction of property was very considerable at Carlisle, Whitehaven, Preston, Blackburn, Oldham, Bury, Rochdale, Newcastle, Hull and Lincoln.[1]

After the colossal outburst of 1839, a year and a half passed before London had another disastrous hurricane on Tuesday,
1840 17 November, 1840. The storm was at its height about 7 p.m. and ceased before midnight; but in that short space of time it had done enormous harm. Trees, roofs, chimneys and, even a few small tenements were demolished. The main losses, however, were in the Thames; twenty to thirty vessels were damaged seriously, eighteen barges with cargoes of coal were sunk above London Bridge, and one hundred boats of watermen

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1. A.R.

were stove in.[1] Almost as disastrous as this was London's next 'tempestuous and boisterous' attack on Monday, 29 December,
1841 1841, when many trees were uprooted in Kensington and Chiswick; shop fronts were blown in and a large number of barges were sunk in the Thames.[2]

'One of those infrequent visitations of Providence' - a
1842 whirlwind - swept over Birkenhead on 21 July, 1842. Before it came there was great stillness, 'every leaf was at rest'. Then suddenly a loud roar was heard resembling a cataract. This continued about two minutes. The wind came from south-east and was about eighty yards wide. Everything bent before it; even houses were said to shake. People were thrown to the ground; umbrellas were torn to shreds. The whole thing, terrifying in the extreme, lasted exactly three minutes.[3]

The wind was the cause of three terrible accidents in
1847 September, 1847. On the 16th., near Sowerby Bridge, a Manchester train ran off the line resulting in loss of life and many injuries. At the moment the reason of the disaster was something of a mystery, but, on enquiry, it was 'supposed to be from the oscillation caused by a severe gale of wind then blowing'. That the power of the wind was most unusual was shown by the second accident, which took place at Hadleigh Station. At the time it was unfortunately crowded with excursionists waiting for a train and sheltering from the force of the blast behind a 'wing-wall'. 'The wind had been blowing

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1. Ibid.
2. Ibid.
3. Ibid. cf. 1767.

all the forenoon with terrific violence, and was peculiarly felt at the station from its exposed position .... a tremendous gust of wind occurred, and the wing-wall was thrown down in one mass .... the platform gave way beneath the accumulated weight .... more than sixty persons were injured'. To add to the horrors of this month, on the 18th., there was one of the most disastrous village-fires of modern times. A fire broke out at Cottenham, Cambridgeshire; normally, it might easily have been checked; but, there was a very high wind, and fanned by this stiff breeze, the flames travelled with immense rapidity, and a third of the village was consumed.[1]

1850 A land and coastal storm of some notoriety passed over the greater part of England on 6 October, 1850. In the Thames vessels were driven ashore; at Nottingham much damage was done to buildings: and Liverpool sustained heavy losses in shipping. But the fame of these storms is as nothing to that of those outbursts of wind that caused the sudden death of two ladies. The first case was on 5 November, when Lady Carden was shot by a gun resting against a tree put there by her husband or brother-in-law. 'A sudden gale of wind arose which shook the tree and caused' the discharge of the gun.
1852 The second calamity was on 10 February, 1852, when a gust of wind caused the collapse of a gate at Brighton Pavilion and killed a lady who was sheltering near by.[2]

A storm that may certainly be classified as historic,

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1. Ibid. 2. Ibid.

occurred on Christmas day, 1852. It raged in most parts of the kingdom. In London there was the usual damage to trees and roofs; a woman was killed in Bishopsgate by the collapse of a chimney stack. A large gasometer was blown down at Windsor. At Oxford the fall of a chimney stack at Magdalen College did considerable damage to the roof of the President's Lodgings. At Liverpool and most coast towns there was much loss of shipping; and at Maryport the south pier and lighthouse were badly shattered.[1]

Of coastal gales there were many in the 'fifties, but the next severe land storm, as experienced by London, was on
1858 15 November, 1858, when a hurricane from the North east caused the death of two persons and the destruction of some property. A policeman had a narrow escape from being drowned, having been blown into the Grand Surrey Canal, but was rescued. As usual the craft in the Thames had many misfortunes. An equally
1859 furious storm was repeated on 1 November, 1859, when several lives were lost in London. Two children were blown off the pavement and crushed under a cart; and two men were precipitated into the Thames. The storm was wide-spread; a wooden theatre was destroyed at Newport, Monmouthshire; a large stack of chimneys fell at Eastbourne, and there were shipping disasters on the coasts.[2] Another severe gale passed over Wiltshire, on 30 December, when 'it operated like a tropical tornado', destroying in its course, cottages and hayricks, and snapping large trees in half like matchwood.[3] This was

1. Ibid.
2. Ibid.
3. Ibid.

followed all over the kingdom by a 'furious gale' at 10.a.m., 1860 on 27 February, 1860. In London there was the usual crash of chimney pots and capsizing of boats in the Thames; two men lost their lives by being blown into the Deptford canal; at Camberwell the front of the Addington Square Baths was torn off. In the provinces there was similar destruction. At Derby the spire of the ancient church of St. Alkmund was blown down; at Norwich a mill chimney was swept to the ground; at Leicester, Nottingham, Stockport, Shields, Birmingham and Portsmouth property was also destroyed. Closely resembling this, another storm started on 18 April, and lasted for seventy hours; and, a second on the 24th., which lasted for sixty-six hours.[1] Further gales occurred, but all were surpassed by a cruel outburst in London and elsewhere which began on 26 May, and lasted for ninety hours, which is one of the longest windstorms on record.[2]

The actual damage on land and sea caused by a tempest, 1861 mainly confined to southern England, on 26 February, 1861, is very difficult to estimate. It destroyed a wing of the Crystal Palace; and, during its height, the tower of the cathedral at Chichester collapsed.[3] At Lambeth the lead was torn off the roof of the Church, and in Lambeth Walk a stack of chimneys was blown down. A building fell in Church Street, Kensington, and killed three workmen, and a church was unroofed at Woolwich; the workmen at the powder-works at Hounslow had to evacuate buildings which were regarded as unsafe. At

1. Ibid.
2. vide ch.VII.
3. Nature, 1930.

Reading the station was wrecked; at Northampton, several persons were killed by the fall of a chimney-stack; at Bristol some houses collapsed; at Bedminster the cross on the church was blown down; and at Weston-super-mare a church was destroyed. The destruction at Exeter and Torquay was considerable; and 'ancestral trees' were said to be uprooted inthe counties of Warwick and Gloucester.[1]

1862 A mighty storm by land and sea burst over the British Isles on Sunday, 19 October, 1862, and raged for several days. It reached its greatest force in London on the first day about 9 p.m. Chimneys and tiles were scattered in all districts including Dulwich, Peckham, Camberwell and Sydenham. The storm produced heavy floods at Greenwich, Stratford, Lambeth and Battersea; and much shipping was damaged in the Thames. In the north the storm was very violent. At Liverpool a mill-chimney fell and destroyed a building immediately beneath. General damage was caused at Leeds and Bradford, and in the midst of the gale, a chimney was shattered by lightning at Adwalton Moor. The storm was so furious at Plymouth that recently constructed works inside the breakwater, 'of great magnitude and cost were utterly destroyed'.[2] Not content with this exhibition of the forces of Nature, another gale 'from the north-west swept over a great part of England between 18-20 December, but the damage was not so much on land as at sea.[3]

1865 London's annual autumnal gale arrived in 1865 on 22 November.

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1. A.R.
2. Ibid.
3. vide ch. VII.

Chimney pots were sent flying; the roof of the Marylebone Workhouse was torn off; workmen were blown from scaffolding; one was killed in Cannon Street; a building in Southwark, in course of construction, was blown down; and many boats were swamped in the Thames. For some time after this there seems to have been a period of calm until the middle of January,
1868 1868, when an undeniable tempest burst over Wales on the 22nd., and over the north of England on the 24th., and 25th. On the second day it 'raged with the fury of a hurricane'. Two persons were killed at Sheffield by the collapse of their dwelling; a log was blown into the river Aire; a labourer was crushed to death by the fall of a chimney-stack at Scarborough; a gasometer was destroyed at Hull; and all through Yorkshire, Cumberland, Durham and Northumberland there were
1869 turbulent floods. The turn of London came again on 1 February, when amongst other disasters, a chimney stack at Bow fell into some workshops and brought death or injury to several persons. Before the year closed another destructive gale passed throughout the kingdom on 6-7 December. In London it was described as 'a hurricane. In Blackfriars Road a timber yard had its contents literally 'scattered'; and near-by chimney stacks and roofs were torn off. Great havoc was caused amongst the trees of Windsor Park. Lancashire had another storm on the 27th., when at Rochdale some newly constructed houses collapsed causing loss of life.[1]

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1. A.R.

The final destruction of the famous Star and Garter at Richmond was completed by wind. The well known hostelry of many years had been previously burnt out, and at 5 p.m. on
1870 12 January, 1870, a strong gale from the west, 'brought down the few outer walls of the old building'.[1] Two years later there was a terrific gale in London in the early morning of
1872 24 January, 1872, when a pinnacle of the central tower of the Houses of Parliament crashed. There was an 'equatorial gale' on 18-19 February, and north-east of Yorkshire was swept by a 'wild tempestuous' wind on the 22nd. There was an extensive storm on 28 March; and May seems to have been an unpleasant month, as a contemporary describes it as 'ungenial' and 'stormy'.[2] The whole year was unsatisfactory, but it surpassed itself on 8 December, when there was the most severe gale that had occurred for many years. Several persons were injured in London by falling chimneys and advertisement hoardings. On this occasion a remarkable case of the power of the wind was given by a shopkeeper in Newgate Street. 'The wind unlocked all my shutters and blew them right out into the street'. In some parts of London houses were blown down, trees were torn up or snapped off; and many barges were sunk in the Thames.[3] During the same storm the wind was unusually high at Oxford.[4] A wall and some pinnacles were shattered at Oriel College; and the Great western Railway station, which was in process of creation, was prostrated. Christchurch not only lost part of the battlements, but several trees in the Broad Walk. Some stone work

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1. Ibid.
2. Ibid.
3. Ibid.
4. J.J.M.

at All Souls College was destroyed, and the river was so lashed into fury that some of the College Barges were sunk.[1]

A severe storm swept through Lancashire and Yorkshire on
1873 16 December, 1873,[2] causing ten deaths. In Leeds alone, the damage was estimated at £20,000. In Sheffield it was equally destructive. High chimneys were swept down, falling in certain cases, across the works; and, in one instance, causing the death of six, and the injury of fourteen persons. Destruction of a similar character though in a minor degree could be traced from end to end of the northern counties.[3] The likelihood of continual wind-storms appeared in the next year, more particularly between 20 October and 20 December,
1874 1874. This period was marked by numerous gales but their violence, and certainly their destructive power, was mainly associated with the coasts.[4] Floods were the chief feature
1875 of 1875, until 26 September, when a general gale drove from end to end of the kingdom. At Liverpool the force of the wind was 81 miles per hour; and here buildings were unroofed and ships wrecked in the Mersey. In Bolton Road, Bradford, nine persons narrowly escaped being crushed to death by a falling chimney; a house was blown down at Carsett; and, at Westwood an iron school was 'literally blown away'. Strange though it may seem, it is recorded that the wind caused the collapse of a newly erected large mill at Seadley, near Manchester.[5] The year ended with many coastal gales.

1876 The water-spout of 28 September, 1876 in the Isle of Wight has already been dealt with,[6] although it might be class-

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1. A.R. 2. H.D.D. 3. A.R. 4. <u>vide</u> ch.VII. 5. A.R. 6. <u>vide</u> ch.V

ified in this category of winds, as it is called a 'whirlwind'. A clear case, however, of whirlwind and not of water-spout, was that at Nantwich on 14 October, which damaged some of the pinnacles of the church; and tore off roofs and chimneys. At Dorfold and in the neighbourhood of Shrewsbury many fruit trees were uprooted.[1] The story of destruction was continued by a terrific gale from the south-west which started on 30 December and continued into the next year. London, on 1
1877 January, 1877, suffered from wind and flood. This, however, bad as it appeared at the time, was completely outclassed on 14-15 October, when another storm exacted heavy toll by land and sea. Some persons stated that it was the worst there had been for many years. It was extremly furious in Oxford where it was reported 'as one of the greatest hurricanes ever remembered'. Scores of trees were blown down in Christchurch meadow, and telegraph poles were strewn in all directions.[2] Violent as this undoubtedly was, it is probable that the most severe storm over the country during the second half of the nineteenth century was that on the night of 13-14 October,
1881 1881.[3] It left an everlasting impression upon the mind of the present writer. In London there were eight deaths; Kensington and the parks were covered with fallen trees. At Bushey Park twenty-six limes were torn up, and in the Home Park, Windsor sixty trees were destroyed. At Oxford, where the pace of the wind was sixty five miles per hour, many willows fell by the side of the river Cherwell, and outside the city,

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1. Hall.
2. A.R.
3. _Nature_, 1930.

at Woodstock, many fine trees were destroyed at Blenheim Palace. At Colchester, a large stone cross was swept off the west end of the church of St. Nicholas. A remarkable feature of the storm was near Bourne Pond where a poplar 'having fallen across the road, men were set to work to remove it but when the upper branches' were lopped off 'the trunk began to rise from the ground, and in a few minutes resumed its perpendicular position'.[1] Further gales raged through the country on 26-7 November and, again, on 17-21 December.[2]

1882 The year 1882 began with an immoderate storm on 6 January, but this was not so notorious as a very curious gale on 29 April, which irreparably damaged the spring foliage.[3] In London it blew with enormous force accompanied by a biting temperature, and it is stated that more trees were uprooted in the parks of London, 'than in any gale of previous years'.[4] Further storms, of rather less severity, occurred on 22-3
1883 August, 24 October and 6 December. The year 1883 proved as unpleasant and destructive as its predecessor. There were heavy gales at the end of January, at the beginning of February and on 1 March. These were completely outclassed in violence on 1-2 September, and on the 26th., and again, on 17-18 October. A climax was reached on 12 December, when a terrific wind not only swept the coasts, but also drove right across England. Damage was done in the southern suburbs of London; Lincoln Cathedral was injured; mill chimneys were

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1. A.R.
2. Ibid. 3. <u>Nature</u>, 1930. 4. A.R.

blown down in Leeds, Huddersfield and Manchester; and, in the latter, five lives were lost.[1]

An unusually extensive gale, accompanied by thunder, travelled from the Yorkshire coast through the Midlands to
1886 Devon, on 13 January, 1886. Another storm played havoc from Lancashire to Cornwall on 30 March; during this gale, in Liverpool, several buildings were blown down, and in Wigna a tramcar was overturned. Another gale that reached from the northern Midlands to the South Coast was on 15 October. The electric railway was swept away at Brighton; a high wall was blown down at Rochester, and other damage occurred, in such widely separated parts as Portsmouth, Plymouth, Swansea and Birmingham. Wind storms all over England, of a more or less
1887 disastrous nature took place on 6 April, and 20 May, 1887; the other gales during the year were mainly coastal. A tempest, confined to the north of England, caused the collapse of roofs at Jarrow and Hebburn-on-Tyne, and the destruction of the
1888 spire of St. Nicholas' Church, Durham, on 16 November, 1888. A storm, equally restricted, but in this case to the south of
1889 England, was that on 24 November, 1889. The sea-wall was seriously damaged at Sandgate, and the main roads of the district were rendered impassable.[2] The south and west coasts had bad
1890 storms in January, 1890.[3] But the whole kingdom had the usual autumnal wind on 7 November, when a south westerly gale did much damage in London, Liverpool and Birmingham.[4]

A violent tempest, accompanied with loss of life, occurred
1891 in the Midland and Northern counties on 20-21 September, 1891.

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1. Ibid. 2. Ibid. 3. *vide* ch. VII. 4. A.R.

A gale swept across Dorset, and all temegraph communication was cut off between Bristol and London, on 13 October. During this outburst the Parks of London, Windsor and Richmond lost many trees. Further serious outbursts this year, attacked London, and one from the Southwest caused some loss of life from falling chimneys on 11 November.[1]

A very severe sea and land storm took place on 17 November,
1893 1893. Inland, factory chimneys and roofs of houses were destroyed; telegraph poles were blown down, and, to add to the discomforts and difficulties, there was much snow. The wind was mainly from the north-east. It was terrific on the next day and all hunting in the wolds was stopped.[2] A gale
1894 from the south-west, on 12 February, 1894, did much damage throughout the kingdom, and lasted for a long period, having hardly blown itself out in thirty six hours. A still more persistent gale, continuing, at least, forty eight hours, blew on 12-13 November; and an equally furious hurricane passed over the northern counties on 21-22 December. The later storm was said, at the time, to have been one of the most violent 'that had ever occurred'. A very serious accident was caused by it on the 21st., near Crewe, when a goods waggon was blown on to the up-line, an express dashed into it, with the appalling result that fourteen persons were killed and sixty injured. Tramcars were blown over in some towns. At Fleetwood, on the 22nd., between 8.30 and 9.30 a.m., the wind was seventy five miles per hour; and at Masham, Yorkshire,

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1. Ibid. 2. T & K.

it was sixty five miles per hour.[1] A house was completely shattered in Manningham with the loss of one life; the conservatories in the Public Park were blown through; the top of a steam-tram was torn off and carried ocross a field; andthe damage amounted to thousands of pounds.[2]

In the midlands and East Anglia the worst wind storm of
1895 the nineteenth century took place on 24 March, 1895. The gale was thirty to fifty miles in width, and did great destruction to churches, houses, and other property. Thousands of trees were destroyed particularly some fine plantations in Norfolk and Northamptonshire. The south west front and the towers of Peterborough Cathedral were injured; and the leaden roof of the Banqueting Hall at Whitehall was completely rolled up.[3] So tremendous was its force that in the Observatory at Birmingham the oscillation of the building stopped the clock.[4]

For astounding continuance and pertinacity the gale of
1897 2 September, 1897, is hard to beat because, during this storm, a South west wind, together with lashing rain, raged for three days 'without intermission'. Another very lengthy storm was
1898 from the North-east on 24-26 March, 1898. But these were steady and persistent, without peculiarities. A very different wind was the short sharp cyclone over Camberwell, on 29 October, when much property was destroyed, but there wasno loss of life. A South westerly gale tore through many parts on 27 December;
1899 but with very little damage.[5] On and about 1 January, 1899.

1. A.R.
2. R.W.J.
3. A.R. 4. _Nature_, 1930. 5. A.R.

England participated in the hurricane that passed generally over the whole of Western Europe. It was during this unusual outburst that a part of the Chester and Holyhead Railway was washed away.[1] Very considerable destruction was caused amongst buildings and trees in Wiltshire, on 1 October, about 2.15 p.m. owing to the passage of a whirlwind, which seems to have proceeded for twenty miles, with a width of about one hundred yards, and then subsided. This was, obviously, local; whereas the storm of hurricane force on 3 November, was wide-spread and caused much damage throughout the southern and midland counties.[2]

1903 It would be difficult to find many winds, in this country, of greater strength than that on 26-27 February, 1903. It was of such force, that at one time, at Southport it reached a velocity of ninety two miles per hour. This alone is sufficient proof of its immense power, but the fact that it buckled the Menai Bridge is still further evidence of what such a wind can do.[3] Another thing, as unprecedented, occurred on a different railway line. On Leven viaduct, near Ulverstone, a train consisting of the passenger coaches and vans, was <u>overturned</u> by the force of the storm.[4] On the same day a train crossing the high bridge over the Manchester Ship Canal '<u>shuddered</u>' from end to end but fortunately escaped unharmed.[5] Another of those rare blighting winds, to which reference has been made, occurred on 10 September, of this year. It was particularly noticeable on the South coast where the

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1. Ibid.
2. Ibid.
3. Ibid. 4. <u>Nature</u>, 1930. 5. R.W.J.

autumn vegetation was scorched brown, curled and shrivelled, even at places in the lee of the Downs, several miles inland. It was thought, at the time, that the effect could scarcely have been caused by salt spray, as the storm was accompanied by very heavy rainfall.[1] This same storm, without the blighting effect, but attended with disaster, also passed over Oxford. 'The Broad Walk (Christchurch) has suffered; the wind spun in whirls, and it has broken big trees as one could snap a carrot.'[2]

A very sudden south-west gale carried destruction in its wake throughout the greater portion of the Midlands and Wales,
1908 on 22 February, 1908. Somewhat similar storms raged on
1912,1913 26 December, 1912, and on 11-13 January, 1913.[3] A real tornado passed over South Wales on 13 October, of the same year, finally reaching as far north as Shropshire, during which it twisted off the tops of trees.[4] It must have been a gale of this character that destroyed a house and caused one death at Clapham, after having passed over a good part of the South of England
1914 on 28 December, 1914. Both these were somewhat local, but hurricanes that assailed a great part of the kingdom, causing much damage, were those of 1 January, 15 February and 28 March,
1916 1916.[5] In the last year, on 16 October, there was a whirlwind in Essex, the track of which was about one hundred yards wide. Although, fortunately, there was no loss of life, the destruction was very considerable, amounting to thousands of pounds.[6] A wind of high velocity, measured at seventy miles

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1. *Nature*, 1930. 2. F.Y.P. 3. A.R. 4. *Nature*, 1930.
5. A.R. 6. *Nature*, 1930.

per hour, swept over London, very suddenly on 2 December, 1919; and a rather less velocity of fifty miles per hour, was recorded of a gale over most of the country on 11 January, 1920.[1]
1920
These, however, are reduced to insignificance by the storm of 12-15 April,[2] which at 3000 feet reached one hundred and ten miles per hour.[3] A very much less forceful wind than this, but nevertheless a considerable gale, raged in southern England
1921 on 27 December, 1921; again in the same district on 8 March,
1922 1922;[4] in Hampshire on 4 July of the latter year; in the north
1923 of England on 14 November, 1923; and throughout the whole country, reaching a force of seventy two miles per hour, on 27
1924 November, 1924. These were surpassed by an eighty mile per
1925 hour gale on 16 April, 1925, and one of eighty three miles per hour on 30 December. But these, in turn, proved inferior to a colossal storm that passed all through the country and caused loss of life and property, and which had a recorded velocity
1927 of one hundred and two miles per hour, on 27 January, 1927. Further gales of a disastrous character occurred on 28 October
1928 of the same year, and on 10-12 February, 1928. The November of this year witnessed particularly bad outbursts. All through the British Isles between the 16th., and the 18th., gales of ninety miles per hour were registered;[5] and on the 23rd. another gale swept the country causing much damage; many trees being torn up in West Sussex.[6] Nearly a year elapsed before there was anything approaching these tempests. On 7 May,

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1. A.R.
2. Nature, 1930.
3. The highest speed known in this part of the world is one hundred and eleven miles per hour, which occurred in Ireland for one minute on 27 January, 1920.
4. A.R. 5. Ibid. 6. The Times, 1932.

1929 1929, a wind, with a velocity of sixty miles per hour, passed over southern England. Something rather like it fell on London on 11 November, when roofs and hoardings were scattered broadcast. A far worse one, of eighty miles per hour, is recorded for 7 December, and this continued until the 9th., reaching a maximum velocity of one hundred miles per hour, in the South West of England, on the 8th. Another very

1930 violent storm in January, 1930 again caused much destruction of trees in Sussex,[1] but the velocity was not as great as that of the previous year. This seems to be the last of

1931 this type until the close of 1931.

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1. Ibid.

14

Chapter VII.

Wind on the Coast.

Thou shalt break the ships of the sea through the east wind.

Psalms.

The bitter storms and tempests, poor seamen must endure
Both day and night, with many a fright! we seldom rest secure.

Martin Parker.

God moves in a mysterious way
His wonders to perform;
He plants his footsteps in the sea
And rides upon the storm.

Cowper.

The father sat and told them tales
Of wrecks in the great September gales.

Henry Longfellow.

Where are the lads that sailed before ?
(Hear what the sea-wind saith)
Their bones are white by many a shore,
They sleep with Admiral Death.

Henry Newbolt.

The accounts of coastal storms and of the wreckage and loss of life that accompanied them, are some of the saddest stories of English History. Occasionally, however, though tragedy was inevitably present, certain storms momentarily played a beneficent part as far as the inhabitants of this

country were concerned.

Julius Caesar, probably, made his first attack on these
55 B.C. islands on 24-25 August, 55, B.C. The sight of his vast armament must have terrorised the Britons gathered on the cliffs of Dover, but their spirits were somewhat revived, when on the 29th, they saw 'the cavalry transports dispersed and driven off by a sudden gale from the east', and that night still further would they rejoice when the high tide and the surf, the result of the storm, did considerable damage to the Roman shipping of which part was at anchor and part drawn up on the beach. A channel gale, in the next year was
54 B.C. also important. In the last week of June, 54 B.C., when all was ready for Caesar's second attempt, a violent westerly breeze forced him to wait for twenty-five days, until the wind changed and make it possible for him to start on 18-20 July. But even then, the elements were against him, for having landed and penetrated inland, he was, two days later, recalled to the coast by reports of another storm and of further damage to shipping. On this occasion he found that he had lost forty vessels.[1]

Centuries later the Danes, in making their invasion, realized that storm and tempest sometimes proved a more cruel
877 foe than the Anglo-Saxon <u>fyrd</u>. At the beginning of 877, a great storm caused colossal havoc amongst the Danish fleet whereby one hundred and twenty ships were lost at Swanage.[2]

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1. Sir J.R.F. of E.
2. H.C.

It is evident that, for the time, this was a shattering blow because the Danes handed over hostages to Alfred and hastily retired into Mercia. In later years, however, they flooded

896 England again and again; and in 896, sustained, through storm, a smaller, though a considerable loss, in Southampton Water, when two ships were cast ashore, at flood tide, in a gale. Their crews were captured and brought to the King at Winchester, who commanded that they should be hanged.[1]

Another famous invader was destined to be delayed by a storm in the Channel. William of Normandy, between 12 August

1066 and 12 September, 1066, had his fleet cooped up at Dives because of the bad weather, which was doubly annoying to him, as it postponed his great adventure, and the forces had to be maintained at his personal expense.[2]

It is curious that a great storm on the English coast should create, what was to be in the future, a cause of terrible shipwrecks. One 'story is that the Abbot of St. Augustine, Canterbury, diverted the funds by which the sea-wall protecting Earl Godwin's island (Lomea) was kept up, for the purpose of

1099 building Tenterden steeple, the consequence being that in 1099 an inundation took place and "Tenterden steeple was the cause of the Goodwin Sands"'.[3] Another version, rather more baldly states that, amongst other catastrophes, 'part of the lands of Godwin, Earl of Kent, was swallowed up by the sea, and formed those dangerous sands called ... the Goodwin'.[4] But

1. B.L.
2. W.P.
3. Enc. Brit.
4. Thornton.

who this Godwin, Earl of Kent, at that particular date, happened to be, the historian explaineth not, for there was no Godwin, Earl of Kent, at that period. So that either the story of the formation of the sands is a myth, or the date of the storm and inundation of the sea, should be placed fifty years, at least, earlier. If this great inrush of the North Sea is to be accepted as a fact, - and the actual date is fixed as 11 November, - at any rate, it is impossible to believe the assertion that 100,000 lives were lost.[1]

Storms at sea did not usually attract the chroniclers, but some they could not pass over, as being national disasters.
1216 Thus, for example, on 21 May, 1216, King John had collected a fleet to oppose Prince Louis of France, who intended to invade the Isle of Thanet. The English fleet was dispersed in a gale and Louis succeeded in landing his forces. His venture, however, proved a fiasco, and even though he had had the elements on his side, England did not pass under French rule. The next coastal gale did England a great deal more actual harm than the ineffective French invasion.[2] On 17
1218 November, 1218, there is a record of a renewed inrush of the North Sea, which overwhelmed several parishes and drowned many thousands of persons.[3] Another tempest on 12 November,
1236 1236, drove ships ashore, but in particular, caused great loss of life at Wisbech. 'On the morrow, after the feast of St. Martin, and certain days after, the sea burst out with such

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1. Nature, 1930.
2. G.B.A.
3. Nature, 1930.

tides and tempests of wind, that the marish countries neare to the same were drowned and overflowen, besides great heards and flocks of cattel that perished. The sea rose continually inflowing the space of two days and one night without ebbing, by means of the mighty violence of contrarie winds. At Wisbech .... and in villages thereabouts, the people were drowned in great number, so that in one village there were buried one hundred corpses in one day'.[1]

For some years there was respite from these inundations,
1250 but on 1 October, 1250, in the southern part of the North Sea, many ships were wrecked, and at Winchelsea much damage was done.[2] The terrible story is relived by Holinshed. 'On the first day of October, the moon upon her change, appearing exceeding red and swelled, began to show tokens of the great tempest of wind that followed, which was so large and mightie, both by land and sea, that the thing had not been lightlie knowne, and seldome, or rather never heard of by men then alive. The sea, forced contrarie to his natural course, flowed twice without ebbing, yeelding such a rooring that the same was heard (not without great woonder) a farre distance from the shore. Moreover, the same sea appeared in the darke of the night to burne, as if it had been on fire, and the waves to strive and fight togither after a marvellous sort, so that the mariners could not devise how to save their ships where they laie at

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1. Holinshed C. cf. M.P. and M.of W.
2. Nature, 1930.

anchor, by no cunning or shift which they could devise.

At Hert-burne three tall ships perished without recoverie, besides other smaller vessels. At Winchelsey, besides other hurte that was doone, in bridges, mills, breakes and banks, there were 300 houses and some churches drowned with the high rising of the water-course'.[1] Winchelsea was destined to suffer again, first because it was a pirate centre, and in
1266 1266, was chastised 'bloodily', by Prince Edward, who disliked
1286/7 piracy; and secondly, on 4 February 1287, by a far greater punishment, 'for during another storm the town was practically drowned, all the flatland between Pett and Hythe being inundated .... the Winchelsea of today was forwith begun .... on a rock, near Icklesham, the north and east sides of which were washed by the sea'.[2] A few years after this in the north there was
1293 a great storm on 15 April, 1293, when eleven ships of Germany and Frisia were driven to take shelter in Scarborough.[3]

More than a hundred years later there was a severe gale
1399 on the west coast at the end of July, 1399;[4] but all details are lacking. More information is found of a storm of some
1417 historical consequence which occurred in April, 1417. A contemporary says that when the Earl of March had 'byn a whek upon the see with the Carrilees and shippis the wynde aros andthe wauys with tempeste stronge, and hurled foule togederis, that ther wenden alle to have ben perished and loste: and ther was at that same tyme drownyd a Carriche and a balynger

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1. Holinshed. C.
2. E.V.L.
3. Marsden.
4. Creton.

and all the pepull that weren there ynne: on whos soule god have mercy, amen'. The ships that escaped rode out the storm in Southampton Water.[1] Inundations from the north sea
1421 occurred on 19 November, 1421 during which there was loss of
1450 life;[2] and on 9 October, 1450, with 'such a wellying and spring of waters both of the see water and the ffresh Rivers'.[3] A storm off the east coast, about this period, might have had permanent and important consequences in national history. Edward IV, who had been a refugee at the court of the Duke of Burgundy, determined to make another effort to regain his throne. With a few supporters he crossed tha North Sea to Cromer, where he found no friendly welcome. Putting to sea once again he was buffeted by a severe gale on 12-14
1470/1 March, 1470/1 off the Lincoln coast, and finally, was driven to port at Ravenspur, in the Humber, on the latter day.[4]

1480 There was a heavy gale in the west in December, 1480, and four ships carrying 1000 tons of wine were wrecked in
1505/6 Mounts Bay.[5] Between 11-26 January, 1505/6, there was a considerable storm in the North Sea and Channel, and Philip and his wife were forced to land in Dorsetshire and received the somewhat scurvy hospitality of Henry VII. which led to the enforced treaty of the Intercursus Malus, as already narrated.[6]
1526 Twenty years later, on a certain January day, 1526, the treasure ship, St. Andrew, belonging to the King of Portugal, was driven

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1. C.L.K.
2. Nature, 1930.
3. Baker's C.
4. Sir J.R.L and Y.
5. Cal.Pat.R.
6. cf. Ch.VI.

ashore at Gunwalloe, 'by outrageous tempest of the sea'. On this occasion the greater part of the crew and a large portion of the cargo were landed.[1] A score of years later a coastal storm of Tudor times which affected the estuary of the Thames
1547/8 was towards the end of January, 1547/8 when there 'was soche vehement windes that damaged sore the western barges & ye lade barges from London to Gravysende' some were 'drownyd in
1557/8 a whery'.[2] A more historic channel gale was in January, 1557/8, and known as the 'Calais storm'.[3] During the first few days of January 'the weather had all along been clear and frosty'. Little or nothing was done to relieve the English besieged by the French in Calais. The town fell on the 7th. 'Then all was haste, eagerness, impetuosity .... But the opportunity .... was now altogether gone; the ships were ready .... but a change of weather came .... On the night of the 10th., a gale blew up from the south-west which raged for four days: such vessels as could face the sea, slipped their moorings (off Dover), and made their way into the Thames with loss of spars and rigging; the hulls of the rest strewed Dover beach with wrecks or were swallowed in the quicksands of the Goodwin. The effect .... on the Queen (Mary) was to produce utter prostration. Storms may rise, vessels may be wrecked, and excellent enterprises may suffer hindrance by the common laws or common chances of things; but the Queen, in every large occurrence imagined a miracle; Heaven, she believed, was against her'.[4]

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1. A.N.
2. C.S.Misc.XII.
3. Nature, 1930. Froude gives the date for the storm as 10 January.
4. Froude.

One of the worst inundations, partly caused by the
1571 violence of a gale at sea, was on 5 October, 1571. 'The sea broke in between Wisbech and Walsoken and at the Cross Keies, drowning Tilnere and Old Lin, Saint Marie, Tedney Saint Marie, Tid Saint John, Wauple, Walton, Walsdeen, Emnie, Jarmans and Stow Bridge, all being in the space of ten miles: these towns and villages were overflown, that is to say, Wisbech, Guihome, Parson Drove and Hobhouse. This Hobhouse being an almshouse, and the water breaking down the walls of it, the wind blew the clothes off from the bed of a poore man and his wife, who being cold, awaked, and suddenly stepped out of his bed to reach up his clothes, and slipt up to the bellie in water, and then he thinking himself to be in danger (as he was indeed) and knowing the best waie to escape the danger of the water, he took his wife on his necke, and carried her away, and so were both saved. At the same time, in Wisbech, a garden or tennis-place and a bowling allie walled about with bricke, worth £20. by the year to the owner, was quite destroyed.'[1] During this storm hundreds of sheep and 20,000 head of cattle perished. 'All marshland was drowned by the sea-waters; there were not ten rods of the whole sea-bank from Old or West Lynn to Magdalen Bridge'.[2] At Yarmouth a great part of the bridge was overthrown; and the 'haven-house' was carried six miles into the marshes and set down upright with the haven man and his wife. A ship was driven on to a house,

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1. Holinshed.
2. Parkins.

and some of the sailors climbed out on to the roof. Boats were rowed over St. Neots churchyard walls. The sea broke the banks of the Wash, and destroying the numerous dykes permanently flooded a good deal of low ground.[1]

The wind played an important part in the story of the
1588 Spanish Armada, but not quite in the way that is ordinarily stated. Drake advocated the bold policy of attacking the Spanish fleet on its own coast. 'Twice the English made the attempt, but were blown back by south-west gales into Plymouth Sound. A third effort with a north wind followed' on 7-9 July, 1588, 'but the favouring breeze turned to a head wind before they reached the Spanish coast. The south-west gales which had kept them back, had also held up their victualling ships in the Thames and the Downs; and they were provisioned only for a few days. They had no choice but to run back to Plymouth to revictual; and the wind which carried them along brought the Armada in sight of England on the 19th.' As to the winds that were supposed to save England, Professor Pollard says 'Providential intervention by the winds was alleged by English writers in order to score a theological point over their defeated enemies; and the legend, <u>Flavit Deus et dissipati sunt</u>, by which the victory was commemorated on English medals, ignored the fact that the Spaniards were wrecked because they lacked seamanship, and because their vessels

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1. <u>Nature</u>, 1931.

had been rendered less seaworthy than ever by the English guns at Gravelines.'[1]

1595/6 It has already been shown that the year 1596 was bad from a rain point of view. A Fugger correspondent records on 27 January 'They wrote from London on the 12th inst. that a severe gale blew there that week, in consequence of which a ship ... worth £12,000 was lost with all hands'.[2]

An inundation again took place in the East Anglian Fens

1606/7 owing to a violent storm on 20 January, 1606/7. Further south, the sea came in so 'outrageously', on Romney Marsh, 'that it did not seem as if the area could ever be reclaimed'.[3] The place, however, that was most affected by this 'mightie storme and tempeste from the River', was Barnstaple, where, at least, £2000 damage was done.[4] Young writes, 'By reason of a great tempest, the sea brake in at divers places on the north side of this country, as at Barnstaple, where was much hurt done. At Bridgewater, two villages near thereabouts and our market town overflown, and report of 500 persons drowned, besides many sheep and other cattle. At Bristol it flooded so high that divers packs which were brought thither against Paul's fair, standing together in a common hall of the city for such purposes, stood three feet deep in water'.[5] Fuller writes of these 'sad overflowings' of the Severn sea, and states that dogs, cats, foxes, hares, conies, moles, mice and rats saved themselves on one eminence. He considers that at

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1. A.F.P.
2. F.N.L.
3. Nature, 1930.
4. Reg. Barnstaple.
5. W.Y.D.

least 100 lives were lost.[1] Stow records that 'the waters rose above the tops of the houses', and the event is commemorated by a painted board in the church at Kingston Seymour, where the water in the church was five feet high and lay on the ground about ten days.[2] The floods extended along the coast for about twenty miles and reached a depth of twelve

1613 feet in places.[3] Once again, on 1 November, 1613, the Fen country suffered during a fierce gale. The sea broke in at Wisbech and overflowed a great part of the town both on the north and south sides.[4]

1622/3 In February, 1622/3, when Prince Charles and George Villiers started on their journey to Spain, 'like venturous knights fit to be put in a Romance', they found, on reaching the coast, 'it was stormy weather at sea and a gale blowing overhead', and they were unable to cross to France until the

1624/5 next morning.[5] The following February there was a violent tempest in the Downs, and Sir Richard Bingley in describing it says on the 21st., '2 ships at once drove thwart my hause which I could by no means avoid nor clear myself of until Ihad sunk one of them'.[6] After this for more than two years there is a blank in the records of wind on the coast. A great storm, however, is recorded on 3 September, 1627, at Stokes Bay. Sir Henry Palmer told Sir John Coke that he 'had seldom been in greater stress'.[7] This was followed on 22 October, by a gale from the S.W. off Yarmouth, and Sir Henry Mervyn writes,

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1. Fuller.
2. Stow. 3. <u>Nature</u>, 1930. 4. Watson.
5. P.G. 6. Hist.MSS.Com.23.I. 7. Ibid.

'if God had not mercifully preserved us we had been all cast
1627 away'.[1] In the same neighbourhood on the 28th of the month 'there was a greevous tempest of wind in the night which caused much shipwracke upon the coasts of Norfolk and Suffolk with other places'.[2] A storm resembling the above occurred
1631 in mid October, 1631, when many ships were wrecked in different parts, and, 'the winds blew beyonde measure high, andthe rayne fell downe soe violently and soe fast as one myght have thought that the flood-gates of heaven had beene sett wide
1636 open'.[3] 'Fowle' weather in the Channel in June, 1636, is supposed to have caused many shipwrecks; and these storms seem to have continued as a sailor writes off Scarborough on 15 August, 'since we went from the Downes we have not seene one whole faire day'.[4] A storm played into the hands of the Parliamentarians when Sir John Hotham traitorously held Hull
1642 against the King. Sir John writes on 25 November, 1642, to William Lenthall, the celebrated Speaker of the Long Parliament, concerning a great ship laden with ammunition being driven by stress of weather on to the Lincolnshire coast and then into the Humber, whereupon Sir John detained the vessel.[5] Another disastrous autumnal storm that did considerable damage, was
1646 at the end of September or beginning of October, 1646; as it is recorded on 13 November, in the words, 'the marchants and shipmasters heere informe me that in one storme (about six weeks since) there was 42 shipps cast away uppon the coasts

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1. Ibid.
2. J.R.D.
3. V.P. 4. Hist.MSS.Com.29 III. 5. Ibid. 29.I.

of England'.[1] The very day of the execution of Charles I,
1648/9 30 January, 1648/9, a disaster happened to some of his property. Presumably he thought, to the very end, that he might find a refuge from his persecutors in France, but whether that is so or not, a ship was chartered to carry his wardrobe and other personal property beyond seas. With the King's usual misfortune it was met by a storm, and lost, with about sixty lives, on Godrevy Islands, near Hayle, Cornwall.[2]

Another period of inundations caused by excessive wind,
1659/60 was the month of March, 1659/60. 'In this month', says Rugge 'the wind was very high, and caused great tides, so that great hurt was done to the inhabitants of Westminster, King Street being quite drowned. The Maidenhead boat was cast away and twelve persons with her'.[3] Pepys, on the 20th., bears testimony to these floods, when he writes, 'Then to Westminster where by reason of rain and an easterly wind the water was so high that there were boats rowed in King Street, and all our yard was drowned, that one could not go to my house, so as no man has seen the like almost, all houses full of water'.[4] This was very inconvenient, but elsewhere there was much more serious damage. 'About Dover the waters brake in upon the mainland; and in Kent was very much damage done; so that the report said, £20,000 worth of harm done'.[5] Pepys records
1660 another storm off the Kent coast in April, 1660;[6] though he does not mention the severe weather at Dover on 12 November,
1662 1662.[7]

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1. V.M.
2. J.M.H.
3. Rugge.
4. S.P.D. 5. Rugge. 6. S.P.D. 7. Hist. MSS. Com. 29. III.

Records of storms at sea are very scarce for the next thirty years. Storms there must have been and ships must have been shattered on the waste time and again, but the diarists of the period seem much more interested in frosts

1671 and thunderstorms than in gales at sea. Once again in, 1671, there were terrible inundations in East Anglia, but marshland and the Fens generally were more materially affected than the town and harbour of Wisbech.[1] Another storm marked the

1676 August of 1676, as it imperilled the life of King Charles II. He was a devoted sailor, and embarked for a pleasure cruise from London to Devonshire on the 7th. During this he 'encountered such a succession of blustering western gales that the waiting people of Plymouth, thought him drowned, and when his three little yachts dropped their anchors under St. Nicholas Island, at dawn on the 16th., the joyful news brought them all out of their beds'.[2] Portsmouth experienced a very heavy

1685 gale on Friday, 10 November, 1685, when several ships were damaged, 'especially the Royal Janes and the Coronation'.[3] The navy of King Janes II was to suffer further disasters in

1688 the unfortunate month of November, 1688. Captain Grenville Collins records on the 7th., such a severe storm that he had to go from the Isle of Wight and take refuge in the Downs. On the 9th a more serious catastrophe occurred when H.M.S. Centurion was driven ashore under the South Foreland.[4] Just before Christmas, 1689 bad storms are mentioned as taking

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1. Watson.
2. A.B.
3. Hist.MSS.Com.29,III.
4. Ibid.20.III.

1689 place in Plymouth Sound; and on 4 January, 1689/90 a corres-
pondent writes that there is 'feare of hearing of much more
(wreckage), this being the third day that we heere (Plymouth)
have had such wind, rayne and one thunderstorm more terrible
than usuall'[1] The indefatigable Evelyn records on 15 August,
1690 1690, that owing to 'the unseasonable and most tempestuous
weather .... the naval expedition is hindered';[2] but beyond that
he has little to say about the weather, and we can only gather
from another source that it continued stormy into the next
year.[3] The east wind played England a kindly turn, in May,
1692 1692. because it blew so constantly that it 'gave our fleet
time to unite .... that, had not God so wonderfully favoured,
the enemy would in all probability have fallen upon us'.[4]
By this Evelyn means that 'a contrary wind detained Tourville
on the Norman coast for four weeks, and the same wind enabled
the English and Dutch fleets to affect a junction'.[5] A storm
1695 of less historical importance was reported on 24 June, 1695,
when 'Lord Berkeley having been a little westward of Portland
met there with a hard gale and <u>hurry-durry</u> weather, ... no
damages among them'.[6] Evelyn again records a great storm in
1697 the North Sea on 3 October, 1697; and another on 26 March,
1699 1699, when he writes, 'after an extraordinary storm, there
came up the Thames a whale which was fifty six feet long'.[7]

1703 The great storm by land and sea, in November, 1703, has

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1. Ibid. 24. II.
2. J.E.D.
3. Hist. M.SS. Com. 75.
4. J.E.D.
5. Lodge.
6. Hist. MS. Com. 29. VIII.
7. J.E.D.

already been dealt with. But, if Thomas Hearne is right, as far as the Merchant Navy is concerned, worse things happened
1705 on 11 August, 1705. The storm was in the south and there were very heavy losses 'particularly Portsmouth, where 150 outward Bound Marchant Men above half are missing, the merchants have suffer'd more in their shipping than they did last great Storme'.[1] An historic tempest accompanied by thick and misty weather occurred off the Scilly Isles on 22 October,
1707 1707, and the island of St. Marys was the scene of one of the greatest disasters in the history of the English Navy. The famous Sir Clowdisley Shovel was bringing his fleet home from the siege of Toulon, when owing to the weather ship after ship went ashore and the gallant admiral with 2000 others perished.[2]

It is said that the gale on the south coast on 8 January,
1734 1734, resembled the great storm of November, 1703, for there were many wrecks and several royal ships were driven ashore at Plymouth and Portsmouth. This storm also caused another inundation at Wisbech which deepened the channel right up to the town by which lighterage was considerably saved and trade
1739 stimulated.[3] Storms were frequent in January, 1739, 'by which much mischief has been done at sea and upon the Thames'.[4] There were extensive storms on most of the coasts of England
1740 on 1 November, 1740; at Lynn and Yarmouth there were heavy losses, and lesser disasters at Plymouth, Dartmouth and Falmouth.[5]

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1. T.H.D.
2. J.M.H.
3. Brit.C.
4. Hist.MSS.Com.38.
5. Brit.C.

A land and sea-storm swept England and her coasts on
1741 8 September, 1741, during which much damage was done to shipping in the Thames, the Wash, and the Tyne. In the next year,
1742 on 2-3 October, 1742, there was a great storm at Cardiff; many vessels were cast away, and, the sea having broken in, seven hundred sheep were destroyed.[1] A worse catastrophe occurred
1746 during a gale off the Kentish coast on 24 June, 1746, when a ship bound for Cape Breton Island was lost with all on board except three.[2] Nine English ships were lost at different
1747 points on 1 December, 1747. There was an ugly incident connected with one vessel driven shore at Beachy Head. The mob tried to loot her, and the troops were called out to protect her cargo, and two men were shot. Other lives were lost in the Thames where many smaller craft were wrecked in the same gale.[3]

One of the greatest South west hurricanes known for many
1748 years burst upon the country on 16 December, 1748, when there was considerable wreckage.[4] Boats and barges again suffered
1750 in the Thames on 30 November, 1750. The next day, there were cases of inundation near Axbridge, Somerset, at Chepstow, Monmouthshire, and at Berkeley in Gloucestershire.[5] The county of Kent was again visited by a violent storm on 26
1752 August, 1752 in the course of which a Dutch ship was driven ashore at Ramsgate. But this was as nothing when compared with the gale which started about midnight on 7 October,
1753 1753, and which swept the coasts for some days leaving a trail

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1. Brit.C.
2. Ibid.
3. Ibid.
4. Ibid. 5. Ibid.

of wrecks in its wake.[1] Similar gales occurred in the spring
1754 of 1754 and Horace Walpole informed Miss A. Pitt from London, on 10 February, that the wind and weather in the channel had been wild and rough during the previous fortnight.[2] In the July of the same year, Henry Fielding on his way to Lisbon was weather-bound by a gale off the Devon coast.[3] In the storm of 15
1757 March, 1757, ships were lost at Liverpool, but the main disasters connected with this were inland.[4] On 27 December, that year, there was much damage at sea during a storm that was very wide spread.[5] A far worse one, however, occurred on 15 February,
1760 1760, which passed over nearly the whole of England, and which caused the loss of H.M.S. Ramillies and 734 men on the rocks at Bolt Head. Only one midshipman and twenty-five men were saved.[6]

A far less serious storm, but one which added to the magnificence of the scene was recorded by the Duchess of Northumberland on 23 July, 1760, when she visited Dunstanburgh Castle. 'The grandeur of which' she says 'that day was greatly augmented by a stormy N.E. wind which made the waves (mountains High) clash, foaming & roaring against its walls & made a scene of glorious Horror and terrible Delight'.[7]

1762 The year 1762 was a bad one for gales. On 15 January, there was one of violence on the coasts of Hampshire and Dorset. on 24 February there was a great deal of damage done by a hurricane and thirteen whales were driven ashore;[8] on 3 October,

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1. Ibid.
2. Hist.MSS.Com.30.I.
3. H.F.J.
4. Brit.C. 5. Ibid. 6. Ibid. 7. D.ofD. 8. Brit.C.

numerous fishing smacks, especially at Yarmouth, 'suffered irreparably'.[1] Sunderland, Shields and Newcastle were ever liable to bad storms; and there was one on Sunday, 4 June,
1763 1763;[2] and another on 2 December.[3] It was during this year that a coastal storm severely injured the ancient abbey at Whitby.[4] In the south there was considerable destruction of
1764,1767 shipping on 14 January, 1764, and on 1 January, 1767.[5] At
1769 Portsmouth, on 4 November, 1769, there was a S.S.E. hurricane during which nine men were drowned attempting to cross to Gosport.[6] Bad storms are reported off the Kentish coast on
1773 Wednesday, 8 December, 1773.[7] Still worse gales raged in
1775 the north of England on 29 October, 1775,[7a] when many vessels were wrecked. Wesley writes of a storm at Lowestoft on Wednesday, 20 November, when it blew 'so that it was hard to walk or stand', but he does not record any wrecks.[8] He tells
1777 of a heavy wind storm on the West coast on 13 October, 1777.[9] Another bad gale in the west is mentioned by the Earl of Mornington writing to W.W. Grenville from Anglesea on 30
1786 September, 1786, 'I have been detained here for this whole week by a violent storm and westerly wind, which has continued with such fury that no packet has been able to sail since Sunday .... no sign of change of weather'.[10] Wesley again speaks of another storm of no great importance at Dover and Margate
1788 on 25-26 November, 1788.[11] A storm, however, that can be called

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1. A.R.
2. J.W.J.
3. Thornton.
4. Young.
5. Thornton.
6. A.R.
7. J.W.J. 7a. H.D.D.
8. J.W.J.
9. Ibid.
10. Hist.MSS.Com.30.I.
11. J.W.J.

a tempest, in the true sense, raged round Great Britain on
1794 6 October, 1794, and during its malign efforts destroyed several hundred ships.[1]

1795 On 17-18 November, 1795, there was the historic 'Christian's Storm', named after Admiral Christian, the commander of the fleet that was just starting to sail to the West Indies. General Dyott gives but a brief account of what really was an appalling disaster. 'A most violent gale of wind' he says 'came on that evening whichdid material damage to a number of ships and obliged the fleet to return to Portsmouth. Several of the ships were lost and crews perished'.[2] He goes on to say that one of the ships, 'with a number of officers and 200 men of the 63rd regiment perished on the rocks off Portland'.[3] Of this incident Richard Hussey Vivian wrote, 'The 63rd lost a transport and 180 men .... Captain Godley tells me that there were 14 officers and 235 bodies of soldiers lying on the beach at Portland at the same time'.[4] Sir Frederick Treves, when discussing the church of Wyke Regis, writes 'in this God's Acre is gathered more of the harvest of Deadman's Bay, the scene of some of the most terrible of wrecks. Here lie .... a few of the great company who were washed ashre dead from the transports ... lost in the West Bay .... Of the bodies thrown up by the sea on or about that day no fewer than 208 were buried on the Chesil Beach where they were found'.[5]

There were two severe storms at Scarborough in November,
1801 1801, one on the 2nd, the other on the 21st. In both cases

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1. H.D.D.
2. W.D.D.
3. Ibid.
4. Lord Vivian, Memoirs. 5. Treves.

the lifeboat did good work in rescuing the crews of ships that were driven ashore.[1] More serious wreckage took place at
1803 Margate at 4 a.m., on 12 January, 1803, when many sailors were drowned, and the cargo of one vessel, valued at £100,000, was
1805 lost.[2] In the winter of 1805 there was a storm that caused loss of life on the Shambles. Two hundred were drowned from one ship alone, and eighty of these were buried on the Chesil Beach.[2a] There were two main hurricanes, causing wreck and loss
1806 of life, in 1806. The first was off Sunderland on 27 May; the second off Plymouth and Exmouth on 2 November.[3] The
1807 South coast suffered severely on 18 February, 1807. At Deal forty ships were missing from their anchorage; of these, three went ashore at Margate, and two, near Yarmouth.[4] Some of the details of the storm in the Whitby neighbourhood, on 16 November of this year, can scarcely be credited. It is, of course, quite true that many ships went ashore, and that four were thought to have foundered at sea; but it is hardly believable that the sea was driven over the moors six or seven miles.[5]

The Kent coast once again experienced rough times on
08 14 January, 1808. Much damage was done in Margate, where, not only were ships stove in, but the pier was partly wrecked and a portion of the High Street gave way 'with a most tremendous crash'. Houses were washed away, and such wasthe general

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1. H. ofS.
2. A.R. 2a. Treves.
3. A.R.
4. Ibid.
5. Ibid.

misery and desolation that Parliament was petitioned for financial assistance. At Deal, this storm was called 'a perfect hurricane'; and at Dover, several vessels were sunk. Further north quays were much damaged at Harwich; and at Yarmouth a ship, in course of construction, was dashed to pieces.[1] A renewal of inundations in the low lands of the

1810 Fen country took place on 10 November, 1810, when a tremendous E.S.E. gale, between 11.a.m. and 6.p.m., at Boston blew the tide inland, burst the sea-banks, and flooded many dwellings.[2] Worse, however, happened on 19 December, when H.M.S. Satellite went down with all hands in the Channel during 'a tempestuous gale of wind'.[3] Further destruction to the coast occurred at

1812 Folkestone, on Monday, 19 October, 1812, when certain houses subsided into the sea. This storm extended as far west as Plymouth.[4] It was considerably outclassed in violence by the wind that swept the eastern and southern coasts between 15-20

1814 December, 1814. For six days Dover suffered from an almost perpetual tempest, and during four of these days, there was no communication with the continent. Several ships were driven ashore at Ramsgate. The storm lasted for a week at Portsmouth, Plymouth and Falmouth. As far north as Newcastle there was much destruction of shipping. Apparently, which seems strange, a protracted gale at Weymouth was a little later and centred round the 23rd. During these terrible days there were many wrecks off Portland Bill.[5] Similar disasters occurred in the next year, and it was a wreck in this neighbourhood that caused

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1. Ibid.
2. Ibid.
3. F.D. 4. A.R. 5. Ibid.

the burial on the Chesil Beach of 140 of the passengers and
1815 crew of an East Indiaman, in 1815.[1]

1816 A series of storms in the summer months of 1816, caused some damage. On 31 August, at Mundsley, about 3.p.m. a ship went ashore, and another wasseen to sink three miles out at sea. About the same time at Margate several vessels ran aground, and one in Hearne's Bay, but the latter got off. A small ship was wrecked at Dover, with the loss of two lives, on 10 September. Dover again experienced a strong S.S.W. wind
1818 on 4 March, 1818. The same storm sunk a ship at Portsmouth, a second went ashore at Margate, and seven vessels were wrecked at Ramsgate; and of such a force was 'the tremendous gale' that the woodwork of the new pier at Ryde, I. of W. was washed
18 away.[2] In 1819 there were heavy storms at Plymouth on 2 February, at Whitehaven on 31 August, and at Clovelly on 21 October.

A raging N.N.W. hurricane about 5.a.m. wrecked many
1822 ships in the Thames on 22 March, 1822. A shortlived storm of an hour's duration created havoc at Liverpool on 26 October,
1824 1824.[3] Stranger things happened at the Chesil Beach in that November. 'Once only has the sea made a breach through this curtain of stones', and it was now, 'when the waves hammered a gap in the battlements and flooded the swannery at Abbotsbury to the depth of 22 feet 8 inches, as a pole erected in a field testifies .... At Fleet it swept away the greater part of a

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1. Treves. 2. Ibid. 3. Ibid.

village (East Fleet), and all but the chancel of the church', a ship was lifted by the waves and carried to the top of the bank. It had, some days later, to be 'launched down the far bank into the Fleet'.[1] The same year there was a great storm in the North Sea and English Channel and there were wrecks at Dover, Portsmouth, Weymouth and on the Devon coast.[2]

1825 A storm on 11-12 October, 1825, 'considerably damaged the portion of the New Jetty (at Scarborough) which was expected to have been finished in the course of the year'.[3] The early
1828 days of 1828, opened very badly with a great gale on 12-13 January, many ships being lost, no less than thirteen being wrecked at Plymouth.[4] Sunderland experienced an E.S.E. gale
1830 on 20 January, 1830, whereby fifteen vessels were driven ashore between the north pier and Hendon. 'The practice of assembling to plunder the wrecks was resorted to .... by a host of vagabond men and women. Even children are trained to these atrocious practices'.[5] And so it would appear that the noble teaching of John Wesley against this appalling crime had not succeeded.

1833 A violent hurricane at Liverpool, on 19 November, 1833 wrecked vessels in the Mersey and stopped all communication with the Cheshire shore. Off Formby thirteen persons were drowned. A little later, on 31 December, London experienced something of the same kind, many ships broke from their moorings in the Thames, and several barges were sunk.[6] Scarborough had

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1. Treves.
2. A.R.
3. H. of S.
4. A.R.
5. Ibid.
6. Ibid.

1836 her turn again on Tuesday and Wednesday, 25-26 February, 1836. The storm was very bad on the first day, but on the second it was terrific, and, it was said to be, 'impossible to give anything like a description of the scene the beach presented next morning. Ships were thrown from the stocks and rolling timbers .... tossed in every direction'.[1]

The notable storm in which Grace Darling earned ever-
1838 lasting fame, was on 7 September, 1838. She was the daughter of William Darling, lighthouse keeper on the Longstone, one of the Fame Islands. The steamboat Forfarshire, bound from Hull to Dundee, was wrecked, and a few survivors found refuge on a rock.[2] Darling and his daughter launched a coble and rowed through a tempestuous sea to their rescue. First four men and a woman were successfully taken off and brought to the lighthouse. Darling then returned with two of the rescued men and saved the four others who had been left. The reports of the gallant exploit produced an outburst of enthusiasm. Four years later Grace Darling died of consumption and was buried in Bamburgh church yard.[3]

The autumn is ever a dangerous period on the English coasts. Six weeks after the loss of the Forfarshire, the Bristol Channel, on 28 October, was in a state of raging fury,
1839 and twenty one men were drowned.[4] In the October of 1839, Chesil Beach was, once again, the cause of all the horrors of shipwreck; 'some ten ships were driven ashore' upon the Beach.

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1. H. of S.
2. P.A.G.H.& B. of N.
3. D.N.B.
4. A.R.

'Nine of them were pounded into matchwood, while the tenth - a craft of 500 tons - was lightly thrown by a sea over the beach from the West Bay, and floated away, but little the worse, into the smooth waters of Portland Roads'.[1] A still
1840 more peculiar shipwreck incident occurred in October, 1840, in the Scilly Islands. In a gale a ship was capsized and tossed ashore keel uppermost. Inside, above the actual water, pressed against the planking were some men who were ultimately rescued.[2] Another storm, on 17 November, of the same year, caused many shipwrecks and loss of life on the coast; while in the Thames, 'which presented the appearance of a rough sea for some hours', many boats were stove in, and twenty or thirty vessels cast adrift and seriously injured.[3]

There was a sad loss of life in the Scilly Islands once
1841 again, on 4 January, 1841, when the weather was 'exceedingly boisterous', and from one ship, only four lives were saved out of a total of sixty five.[4] There werenasty hurricanes at
1842 Brighton and Dover on 10 March and 28 July, 1842. But in the same year there was a worse coastal storm covering a far wider area on 21 October. The loss of life and property in this was immense, and extended from Cromer to Ilfracombe. One ship foundered on the Goodwin Sands; two at Deal, and one on the Devon coast. On the next day there was a wreck at East-

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1. Treves.
2. J.M.H.
3. A.R.
4. J.M.H.

bourne; and on the 23rd., ships were wrecked as widely separated as Whitby, Eyemouth and Bideford. This terrible storm

1843 was almost repeated on 13 January, 1843, when 'a hurricane of uncommon severity' was felt all round the island. There were numerous disasters, on the Goodwin Sands, and at Plymouth, Devonport, Boscastle and New Brighton. At Bristol the storm was particularly severe, but no lives were lost in that town.[1]

A 'tremendous gale', was reported from the Kent coast on

1844 20 January, 1844, when a ship was, once again, wrecked on the Goodwin Sands. The West of England caught the full force of a storm on 3 August, when lives were lost at Tenby and Llanelly. 'At Bristol the hurricane was tremendous, and also at Teignmouth, Torbay and Newport'. Proof was wanting as to actual numbers, but many lives were supposed to have been lost. Exact-

1845 ly a year later, on 25 January, 1845, another gale, of considable force caused ships to be wrecked on the coasts of Devon and Cornwall, and at the same time the coast of Norfolk was visited and several wrecks occurred at Yarmouth.[2] Before the year closed there were heavy North west and north east gales on Christmas Eve, when two ships were destroyed at Bideford; at the same time, forty persons perished in Cardigan Bay. In addition to these disasters, a ship with a cargo worth £30,000 went down on the Kentish Knock, another worth £20,000 was lost in Camers Bay, and a third of considerably lesser value off Pevensey.[3] Equally disastrous to shipping were October

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1. A.R.
2. Ibid.
3. Ibid.

18[illegible] and November, 1846. On 15 October, a French vessel was in grave distress off Broadstairs. On the 23rd. and 24th., there were very hideous storms on the south west coast after a 'magnificent summer'. There were many wrecks and much loss of life on the Cornish coast, and at Fishguard, Milford and Aberystwith. At Liverpool, at noon on 20 November, the gale was 'terrific'; and several ships were driven ashore. On all parts of the Welsh coast there were wrecks, and on the East coast as far north as Shields ships came to sad ends, but in this particular case, matters were made more appalling by a number of robbers pillaging the stranded vessels.[1]

Gales of a corresponding intensity were experienced on
1847 5-7 December, 1847, when a ship was wrecked in Pevensey Bay, and others on the Goodwin Sands, off the Nose, and at Yarmouth, Cromer, Lyme and Holyhead. Exactly two years later, on 7
1849 December, 1849, six vessels were lost on the Gunfleet Sands, and twenty men were drowned off the Tyne. The following 30 March,
1850 1850, 200 lives perished near Margate; and on 29-30 April, a ship was lost near Liverpool, and another, with a cargo valued at £20,000 on the Horse Bank. Two vessels were wrecked at Yarmouth on 6 October, and many boats were driven ashore in the Thames and in the Mersey.[2]

1851 Before day-break, on 11 January, 1851, in a south westerly gale, a Liverpool vessel bound to South America, struck on the Great and Little Brisons, near Cape Cornwall, and only

1. Ibid. cf. 1830.
2. Ibid.

three of the ship's company were saved.[1] After a very thundery summer, this September, earned some notoriety for storms at sea. On the 7th., a ship was entirely lost, but her crew was saved, on the Kentish Knock; another went down on the Longsand, the men however, were rescued by a Margate lugger. Towards the end of the month, on the 25th., fifteen colliers were driven ashore at Redcar, six vessels were wrecked at Whitby, a large ship went down just off Cromer, and, altogether, Lloyds reported 100 vessels stranded in this hurricane. Similar catastrophes
1852 were repeated next year. On 29 September, 1852, the storm was very severe on the north coast; and on 26 October, fourteen vessels were driven ashore in the neighbourhood of Sunderland. Four days later a large number of ships were wrecked near Shields, amongst which, one vessel with a cargo valued at £100,000, broke up, and altogether on this coast 100 lives were lost. A still more extensive storm burst from end to end of the country on Christmas Day. Ships were lost at Tynemouth, Yarmouth, Aldburgh, Orfordness, Brighton,[2] Portsmouth, Lyme Regis, and as far northwest as Morecambe.

The years 1853 and 1854 were very serious owing to losses
1853 at sea. On 26 February, 1853, there were great western gales. Many ships were wrecked at Liverpool. At the same time there was a storm on the eastern coast and many fishing smacks foundered. Large numbers of vessels ran ashore as far north as the Northunbrian coast, and as far south as the Goodwin Sands.

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1. J.M.H.
2. A.R.

The storm increased in intensity for a few days, and the suffering of those exposed to its violence was made more horrible by a blinding snow-storm. Later in the year, a more than usually terrible equinoctial gale from the north west, on 25 September, caused wrecks at Scarborough, Cromer, Dungeness, Folkestone, Shoreham and Liverpool. Nor did these gales cease with the
1854 new year. On 4-6 January, 1854, there was intense cold with vicious winds, and the record for the whole month was 258 wrecks, or ships seriously damaged, and 467 persons drowned. It seemed as if February was going to repeat this appalling state of affairs. On the 18th., and 19th., many vessels were driven ashore on the north west coast. The autumn was as bad. On 19-24 October, there were continuous storms and wrecks at Hartlepool, Sunderland and Seaton. And during November there were 131 vessels wrecked or damaged.[1] The December of the year showed little or no improvement in the West of England. During thick and tempestuous weather an iron-screw steamer struck 'The Stones, near Hayle, Cornwall, and then foundered in twelve fathoms with all on board'.[2]

1855 For several days round 20 January, 1855, there was a violent N.N.E. gale on the east coast and twenty eight lives were lost off Margate.[3] In May, one of the worst disasters off the Manacles occurred, when an emigrant ship was cast away with a loss of 191 lives.[4] On 29-30 October the east coast

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1. Ibid.
2. J.M.H.
3. A.R.
4. J.M.H.

suffered terribly. Numerous vessels foundered off Hartlepool, eight went ashore at Shields and several at Whitby. At Cromer H.M.S. Hind was driven ashore. Taking October and November together there were 310 wrecks on the coasts of the United Kingdom. During the next two years the list of wrecks
1856 on the British coasts is horrifying. In 1856: - January, 149: February, 154: March, 96: April, 74: May, 57: June, 32: July, 48: August, 51: September, 98: October, 99: November,
1857 129: December, 166. In 1857: - January, 281: (these included losses at Rhyl, Bristol, Penzance, Hartlepool, Shields, Whitby, Scarborough, Robin Hood's Bay and in the Downs): February, 64: March, 166: April, 76: May, 33: June, 34: July, 33: August, 75: September, 66: October, 135: November, 94: December, 86.[1]

1858 A great storm on 20 October, 1858, caused the destruction of ships and lives at Yarmouth. The next gale of a really
1859 formidable character was on 23 January, 1859, near the Lizard. In the autumn of that year, on 25-26 October, during a terrible storm the Royal Charter was wrecked on the coast of Anglesea with the loss of nearly 500 lives. This disaster led directly to the establishment of the meteorologicalservice in England and to the issue of gale warnings by Admiral Fitz Roy. In the same storm the Great Eastern narrowly escaped destruction at Holyhead; while Stephenson's viaduct at Penmaenmawr was carried away. Further south, the old chain pier at Brighton

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1. A.R.

was destroyed, and great damage was done to the railway on the beach below the cliffs at Dover.[1] During the two days 195 vessels were wrecked on the British coast.[2] There were further wrecks, on 1 November, in the Thames and off Lowestoft. And still more on the 5th., at Yarmouth, Southwold, Portsmouth, Plymouth, Bideford, and in the Mersey. It is almost incredible, but it is a fact, that between 25 October, and 5 November, 748 lives were lost in the British seas, and 487 were saved by life-boats. Still further gales continued in late November and early December, and a tragic event was on the 21st., of the latter, when the Aldborough life-boat, attempting a rescue, capsized.[3]

The period was undoubtedly a very stormy one. The end
1860 of February, 1860, was filled with gales which did much mischief.[4] At 10.a.m. on the 27th., there was a furious wind which swamped many boats in the Thames and caused wrecks at Portsmouth and St. David's Head.[5] Terrible gales occurred in April and May.[6] On the 26th., of the latter, one ship was lost at Hartlepool, thirteen Tiley yawls were driven on the rocks, eight ships went down off Yarmouth, and other damage was reported from Portsmouth, Plymouth and Liverpool. Two days later matters were much worse, for 143 ships were wrecked on the English coast, and 186 fishermen of Yarmouth and Lowestoft were drowned.[7] In the October of this awful year, between the 3rd.

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1. Nature, 1930.
2. A.R.
3. Ibid.
4. H.D.D.
5. A.R. 6. H.D.D. 7. A.R.

and the 5th., the coast is said to have been strewn with the shattered remains of vessels.

1861 The January of 1861, opened with wrecks off the Tyne, Whitby, Scarborough, the Goodwin Sands, and Ilfracombe. There were many shipping disasters off Hartlepool on 9 February. On thesame day the Whitby life boat went out five times, and capsized on the sixth venture, twelve out of the thirteen of the crew being drowned. But these tragedies though appalling were but minor incidents when compared with the terrible destruction of the tempest on 28 May, when 143 ships suffered disaster on various parts of the British coasts.[1] The late autumn of 1861 was notorious for gales by land and sea. On 2 November, there was the celebrated wreck of the Coupland, at Scarborough. 'In the early morning, Saturday, ... a storm arose which later became a hurricane.' About 4 p.m. the life boat endeavoured to assist the distressed vessel and was dashed against the Spa, and three lives were lost. The bystanders at 'Children's Corner', rushed to help the life-boat, 'Lord Charles Beauclere, son of the Duke of St. Albans, William Tindall .... and J. Iles were drowned.' J. N Carter, afterwards, painted a well-known water colour of this wreck.'[2] The same day, there were losses elsewhere. Several ships were wrecked at Hartlepool, one at Filey, two at Yarmouth, and one at Harwich. On the 10th., there was a heavy storm in London, which created the usual wreckage in the Thames. Many

1. Ibid.
2. H. of S.

ships were stranded at Yarmouth, and others went down on the Essex coast. At Chatham, Dover, and Portsmouth 'wind and rain is reported to have raged with tropical violence'. Four days later there was another gale which caused the wreck of fifty vessels.[1]

1862 The tempestuous character of the period was carried into 1862. A ship went ashore in Mount's Bay on 22 January, and another in Freshwater Bay, I. of W., on the 25th. A ship foundered off Portsmouth on 9 March; and another on the 20th., in a snow-storm off Flamborough Head. The great storms of the year, however, were in the autumn. The first on 19 October, when ships were lost in the Downs, and in Chale Bay, and certain damage was done at Plymouth; while in the north, ships were wrecked at Wallsend, Sunderland, Brandling Drops, Shields, Sizewell Beach and in the Humber;[2] and a curious incident happened at Newcastle, where the dial of the clock of St. Nicholas Church was blown out.[3] The second heavy storm was 18-20 December, when 'a severe gale from the north west swept over a great part of England'. There was a wreck at Liverpool, and a ship with fifty one lives on board was totally lost in the North Sea.[4]

1864 The gales of 1864 were on 2 August, 5,8,9,14 September, 4,5,17 October, 16,24,25,28 November; the latter causing disasters mainly in the Tynemouth district. The great storm of 1865 was on 22 November, when vessels were wrecked at Plymouth, Bridport and Swansea. At Bristol the gale was classified

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1. A.R.
2. Ibid. 3. P.A.G.H. & B of N. 4. A.R.

as 'extraordinary'; and although the pier was much damaged many ships returned from sea in safety.[1] There were several
1866 wrecks on 7-9 January, 1866 at Liverpool, and a tragic accident to the life-boat at the Lizard.[2] Many vessels sustained injury
1868 off the Welsh coast on 22 January, 1868. A gale swept the coasts generally on 22 August, occasioning twelve wrecks in the Mersey, two or three off the Cornish coast and one off Portland. There were further losses off Land's End on 23-4
1869 October. The Kentish coast was attacked on 3 January, 1869; the Channel was lashed into fury on 6 February, and many vessels were damaged. The Cornish coast was strewn with wreckage, on 19 March, at Boscastle, St. Agnes, Portreath, St. Ives, Lelant, Trevore Bay and near Padstow. On Easter Monday, the 29th., such was the stormy weather at Dover, that a training brig was dashed to pieces against the Admiralty Pier.[3] Scarborough was again the scene of a serious shipwreck on 26 October, afterwards commemorated by J.N. Carter, in water colours.[4]

1870 The shipping disasters of 1870 were mainly in one great gale on 12 October. Two wrecks happened off Lowestoft, several took place in hte neighbourhood of Swansea where the storm was described as 'a hurricane'; and, as usual shipping suffered considerably at Liverpool.[5] A dreadful catastrophe took place in Bridlington Bay, in the memorable storm of 10
1871 February, 1871. On that occasion forty six sailors perished and the life-boat crew was thrown into the water a few yards

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1. Ibid.
2. Ibid.
3. Ibid.
4. H. of S. 5. A.R.

from the pier.[1] The following autumn, on 20 September, a ship went ashore at Bonchurch, I. of W. but all were rescued except one.

1872 As has been said elsewhere, the year 1872, was called by a contemporary writer, 'this extraordinary year'. January was described as a 'wet and tempestuous month'. On the 17th., there was a 'hurricane in squalls of tempestuous force'.[2] On the 24th., the barometer fell very low, and there was a bad storm on most coasts,[3] with many shipping casualties in the Thames. Floods followed in all directions, and on 18-19 February there was an equatorial storm succeeded on the 25th., on the Yorkshire coast by 'a wild tempestuous gale destructive to human life'. There were great storms (and numerous thunderstorms) on 28 March and 27-28 June. Destructive thunderstorms marked July and August; and on the 27th., of the latter, there was a heavy gale off the Norfolk coast when a ship was wrecked, but the crew was rescued by a life-boat. On 19 September, there were storms in the north west; and part of the Holyhead Railway, near Mostyn, was washed away by the sea. Most of October and November, consisted of a series of storms, some of which are called 'tropical' and some 'polar'. On 30 November there was a particularly severe one. Wrecks occurred off Looe, Portland, Plymouth, Mount Batten, Penzance Whitburn Sands and Pendine Point. It is, however, satisfactory to learn that

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1. H.L.G.
2. A.R.
3. H.D.D.

'three hundred sail rode safely at anchor in Falmouth harbour during the terrible storm'.[1] But Falmouth was not always so
1873 fortunate and on 1 February, 1873, wrecks occurred there.
1874 There were several storms in 1874, particularly on 20-24 October, and 29 November to 11 December, but some of the worst winds of the latter period raged round the Channel Islands.[2]

1875 Wild winds swept the Dorset coast on 24 January, 1875. There was a terrible wreck in the Scilly Isles, mainly due to fog, though there was a very heavy sea, on 7 May. At Liverpool, on 26 September, there was a wind with a force of eighty one miles per hour. The South East coast, particularly at Hastings, St. Leonards and Dover, was afflicted by terrible storms on 14 November, and a blinding snow-storm off the Essex coast, on 6 December, caused the wreck of a German mail steamer.
1876 Liverpool had, once again, a bad time, on 31 August, 1876; and, on the same day, in the south the channel crossings were much delayed. The North East coast was strewn with wreckage about 14 November, and there was another tempest in the south
1877 west, on 30 December. This continued into January, 1877, and on the 6th., great damage was done to the Admiralty Pier at Dover, a breach was made in the sea-wall at Brighton, part of the pier was carried away at Eastbourne; and, at Cliftonville, 'the waves washed over the roof of a three-storied house'.[3] The worst storm of the year was 14-15 October, It was said to be 'one of the greatest hurricanes over remembered'.[4]

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1. A.R.
2. H.D.D.
3. A.R.
4. Ibid.

The losses were considerable both by land and sea.[1] It was followed, six weeks after, by another outburst, mainly on the South East coast,[2] on 24-25 November. Several ships went aground on the Goodwins, some were wrecked at Deal, thirty were stranded between Kingsdown and Ramsgate, and fifteen were ashore close to Margate, at which place the life boat was damaged.[3]

A sudden change in the wind, which blew with the force
1878 of a hurricane, caused a terrible disaster on 24 March, 1878, when <u>H.M.S. Eurydice</u>, under full sail and with ports open, heeled to the fury of the blast and went down off Dunnose Point, I. of W. Was it because this disaster was so colossal and heart-rending that all other storms paled into insignificance, and the chroniclers said nothing ? At least it would appear, that there was no serious outburst until 1 January,
1880 1880, when once again the coast was strewn with wreckage.[4] The year, however, was not particularly famous for storms at sea, although in the late October there were some of a severe character. At Scarborough, for example, there was 'the most fearful hurricane that has been known for twenty-five years', and there were many wrecks. 'In the course of a little over twenty four hours, with a terrible gale blowing, the life boat was launched no fewer than five times to vessels in distress and rescued every life in danger'.[5]

In very much the same neighbourhood on 19 January, 1881,

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1. H.D.D.
2. Ibid.
3. A.R.
4. Ibid.
5. H. of S.

188 there was a storm that brought about the 'accomplishment of the Impossible'. A vessel ran ashore upon the dangerous rocks in Robin Hood's Bay. The nearest life-boat was at Whitby, but, says Mr. H.L. Gee, 'it was unthinkable that she could sail in the teeth of a raging gale and over six miles of madly tempestuous sea. Besides there was Black Nab in the way, and after that the wave-battered walls of North Cheek'. So they determined to take the boat over the frozen heights by land. Crowds assisted. 'every obstacle was overcome by almost super-human strength and perseverance. Narrow streets and awkward corners were miraculously negotiated. Snow drifts were over-ridden by sheer force. Treacherous hills were conquered bit by bit, until the inhospitable moorland region was crossed, the life-boat safely directed down the steep-cliff road to the waters edge and a marvellous rescue successfully effected'.[1] This storm which was confined to a special locality was out-classed by that on the following 13-14 October, which raged from end to end of the British Isles, and caused great loss of life at sea, 108 vessels being posted at Lloyds in one day.[2] On 26-27 November there was another great gale particularly at Portsmouth, Brighton and Hastings.[3] There were other storms but of a minor kind on 17-21 December.[4]

1882 The years 1882 to 1884 inclusive had gales at intervals but nothing of outstanding character. They occurred on 6 January, 26-29 April, 22-23 August, 24 October, 1882:

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1. H.L.G.
2. Nature, 1930.
3. A.R.
4. H.D.D.

27-8 January, 11 February, 1 March, 1-2, 26 September, 17-18
1883 October, 12 December, 1883: and 23-24 January, 7, 21 December,
1884 1885 1884.[1] The year 1885 seems peculiarly free from anything that
might be classified as a 'terrific gale'; but on 30 March,
1886 1886, there were many wrecks mainly on the East coast; and on
15 October, there was one of the most disastrous storms for
many years with accidents on land and sea. Brighton, Ports-
mouth, Plymouth and Swansea suffered in particular.[2] The
coasts of the South West of England were again swept on 8-9
1887 December.[3] The end of October, 1887, was thoroughly bad.
On the 29th., eleven lives were lost off Portland and six off
Shanklin. On the 31st the gale revived. At Holyhead the sea
made a breach in the railroad.[4] Three days later the storm
was violent on the south east coast.[5] The following 9-11 March,
1888 1888, were marked by great gales and much loss of life;[6] and
on the 19th., there was a furious tempest accompanied by
snow during which the Channel services were delayed. Storms
were renewed in November, and on the 28th., the life-boat
going out to rescue some fishermen at Staithes, capsized,
twelve out of thirteen of the crew, were, however, rescued.[7]
There was loss of life on several parts of the coast on 2-3
1889 February, 1889,[8] and on the 4th., a wreck off Dungeness.[9]
Further cases of drowning at sea occurred on 21 August and
5-7 October.[10] On the last date the break water was much damaged

1. Ibid.
2. A.R.
3. H.D.D.
4. A.R.
5. H.D.D.
6. Ibid.
7. A.R.
8. H.D.D.
9. A.R.
10. H.D.D.

at Holyhead, and a gunboat was driven ashore on her way to Liverpool.[1]

The South and West coasts were visited by storms on 17-
189 27 January, 1890.[2] On the 23rd., many fishing boats were blown on shore, and the gale was particularly violent at Dover, Brighton, Hastings Eastbourne, Portsmouth and Exmouth.[3] Renewed gales arose on 7 November, when, thanks to the life-boats in all parts many lives were saved.[4] Between the 23rd., and 25th., the channel was lashed into fury and there was considerable damage to shipping.[5] In the next year there were numerous wrecks on the South coast; and the channel steamers
1891 were stopped by a gale on 9 March, 1891. Between that date and the 13th., it is estimated that about sixty lives were lost at Dover, Hastings and Plymouth.[6] The North West coast suffered on 24-26 August;[7] and on the 31st., there was loss of life and shipping on the shores of North Wales, Cheshire and Lancashire.[8] There was a severe storm on the South and South west coasts on 13 October, during which the Admiralty Pier at Dover was clean swept by the sea. This was followed by other storms on, the 19th., and for two days between the 22nd and the 24th. The usual November storm was on the 11th., and there were two in December on the 9th., and 14th.[9]

After a period of remarkably mild and bright weather,
1892 lives were lost in a gale on the East coast on 15 February, 1892.

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1. A.R.
2. H.D.D.
3. A.R.
4. H.D.D.
5. A.R.
6. H.D.D.
7. Ibid.
8. A.R.
9. Ibid.

Another life-boat tragedy occurred on 19 July, when three men of the Liverpool boat were drowned in attempting to rescue the crew of a ship stranded on the Mersey bar. Drought was a
18[illegible] main feature of 1893, but the year was not free from storms, and twenty six out of twenty nine lives were lost off Skegness on 8 July.[1] There were further cases of drowning off the northern coasts on 17 November. On the East coast alone, it was said that 298 vessels were wrecked, and 293 persons perished.[2] Gales of a rather less evere type were experienced on 12 and
1894 20 December.[3] The year 1894, had its main gales at sea on 24
1895 October and 12 November; while 1895, had gales on 12, 23 and 25 January, 24 March, 2 October, 16 and 25 November and 13
1896 December; those of 1896 were on 25 September, 8 October, and
18[illegible] 4 December; those of 1897 were on 3 March, 15 June, 2 September,
1898 29 November, 1 and 30 December; those of 1898 were on 3 February, 24 March, 23 November, and 27-31 December.[4]

1899 January, 1899 opened on the 1st., with a storm that raged over the whole of western Europe, and there were shipping disasters on the south and on the Welsh coasts. But an even more destructive gale occurred on the 12th., during which the Holyhead Railway was again damaged and Channel steamers were unable to cross. Nine days later there was another; and on 11 February, in addition to all the damage on the coast it is said that sixteen vessels and 300 lives were lost in the Atlantic.

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1. Ibid.
2. H.D.D.
3. Ibid.
4. Ibid.

On 7 April, a S.W. gale did great damage on the Welsh and
Cornish coast; and similarly on 8 November, much destruction
was done amongst the transports conveying troops to South
Africa. There was another life-boat tragedy, at Aldeburgh,
on 7 December, when six of the crew were drowned. On the 29th.,
not only was the South Goodwin lightship driven from her moor-
ings, and injured in the surf, but at the same time a ship
wnet ashore off Dungeness.[1] The next year was not pleasant;
it was mainly cold and wet. Some fishermen were drowned in
1900 a N.W. gale at Padstow on 11 April, 1900; and thirty three
lives were lost off Holyhead on 28 December.[2]

The records of the early years of the twentieth century
give the impression that shipping disasters were rather less
frequent than they had been, though needless to say they occur-
red in gales that were, in comparison with the 'true hurricane'
1905 of minor import. January, 1905, had some terrible storms,
causing loss of life at sea on the 7th., and the 16th. A
very heavy sea filled both harbours at Scarborough on 5 October.[3]
The North Sea and Channel again experienced wild weather on
1906 6 January, 1906, and a crew of nine perished off the Yorkshire
coast on the 18th. There were further gales in the same neigh-
1907 bourhood on 13 March. The worst tempest in 1907, with heavy
loss of life, was off the Scilly Isles on 13-14 December.
1908 The two worst in 1908 were on 22 February, when the light-
ship sank off Grimsby: and on 1 September, when a barque
1909 went down off Swansea and twenty men were drowned. In 1909,

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1. A.R.
2. Ibid.
3. H. of S.

in a westerly storm on 2-3 December, the Isle of Man mail steamer foundered with the loss of thirty three lives; about the same time nineteen persons were drowned off the North
1910 Devon coast. Nearly a year later, on 13-14 October, 1910, as results of wrecks, twenty three persons perished at Hartlepool and twenty at Sheringham. The year drew to a close with a prolonged gale in the Channel on 16 December.[1] Minor shipping casualties occurred in a north wind accompanied with
1911 snow, on 12 January, 1911, and heavier gales beat upon the coast on 5-6 April. Similar storms attacked the north and East
1912 coasts on 17 January and 26 December, 1912; on 11-13 January
1913 and 22-23 March, 1913. Wrecks on the South and West coasts
1914 took place 15-16 March, 1914. In all of these heroic services were performed by the crews of life-boats.

The finest record of all, 'a magnificent epic of the era', was the rescue of part of the crew aboard the hospital ship Robilla, which went aground, in a formidable gale, on Saltwick Nab, near Whitby, on 30 October, 1914. Soon after her grounding the mountainous seas broke her in half, and those aft were washed away and drowned. After incredible difficulties a lifeboat from Whitby reached the wreck and brought off twelve men and five nurses. A second attempt brought back eighteen survivors. 'The upgang life-boat was then called' and was 'transported right through the town and over the fields to the

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1. A.R.

cliff opposite the wreck .... the boat was actually lowered down the steep cliffs'. But such was the fury of the sea that it was at first impossible to launch her. At last it was accomplished but she was driven back. Then the motor life-boat from Tynemouth was sent for and arrived at Whitby at one on Sunday morning. Managed with astounding skill, she poured on the boiling seas gallons of oil, and by this means forty men were taken into the boat. But after this success it seemed hopeless because the waves swept the wreck once more; the impossible, however, was conquered and the remnant of ten were also taken into the life-boat and brought safely into the calm waters of Whitby harbour.[1]

1916 The year 1916, had its gales in the early months on 1
1920 January and 15 February; this was also the case in 1920 when the worst storms occurred on 11 January, and 15 March. Great damage and loss of life took place in the North Sea on 6 Nov-
1921 ember, 1921. There was a severe gale in the Channel on 8
1922 March, 1922. A tempest, unprecedented in fury, for many years, swept over Dover, and part of Sandgate castle collapsed
1923 on 12 October, 1923; there were further storms on 14 November.
1924 The year 1924 was famous for two main gales, the one in bitter weather on 8 January, and the other on 27 November, which blew at the varying force of 57 to 72 miles and hour. A somewhat similar storm caused the town of Fleetwood to be
1927 flooded and rendered 400 persons homeless on 28 October, 1927. Lives and property were destroyed by a three days storm between

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1. H.L.G.

1928 10 and 12 February, 1928. The ships in the Channel on 7
1929 December, 1929, had a terrible time having to battle against a wind of eighty miles an hour. Two days later many ships and lives were lost in a gale registered at one hundred miles an hour. The storm continued with further loss of life up to the 10th., and started again on the 30th. The wind was as
1930 bad as ever on 12 January, 1930, causing many wrecks which in turn produced the loss of many lives.[1]

Every weather abomination is associated with the year
1931 1931, and these may be said to have reached a climax in November, when the coast was swept by a midnight storm. Accompanied by a raging hurricane a high tide invaded most sea-side resorts. At Sandgate waves forty feet high broke over houses; at Shoreham a seventy mile per hour wind did great damage to the Bungalows; at Bournemouth some houses were inundated; at Eastbourne forty huts and tents were destroyed or rendered useless; at Portsmouth some of the streets were flooded; at Hayling Island a tidal wave swept across the golf course. The gale, including in certain cases a thunderstorm raged from Kent to Cornwall.[2]

In thinking of these storms one cannot refrain from recalling the familiar words of the Psalms

> 'For at his word the stormy wind ariseth; which lifteth up the waves thereof ...
> They reel to and fro, and stagger like a drunken man: and are at their wit's end
> So when they cry unto the Lord in their trouble: he delivereth them out of their distress
> For he maketh the storm to cease: so that the waves thereof are still.
> Then are they glad because they are at rest: and so he bringeth them unto the haven where they would be'.

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1. A.R. 2. D.T. 11.11.31.

CHAPTER VIII.

Mist and Fog.

As pilot well expert in perilous wave
That to a steadfast star his course hath bent,
When foggy mists, or cloudy tempests, have,
The faithful light of that fair Lamp yblent,
And covered heaven with hideous dreariment.

Edmund Spenser.

I thought, I could not go astray
So perfectly I knew the way,
Yet, in a mist, I missed it.

Thomas Washbourne (1607-8).

The thickness of mirk is bad enough, but
the thickness of white, illimitable ether is
worse a thousandfold, for it closes the eye
and mazes the wits.

John Buchan.

The word 'mist' occurs in Old English, according to the New English Dictionary as early as the year 1000; but the word 'fog', meaning a thick watery vapour, does not appear in English literature until about the reign of Henry VIII. And yet there can be little doubt that the English Channel, ever since there was one, must have been liable to fogs, and the North Sea, again ever since there was one, must have poured upon the eastern coast, what is called in Yorkshire, a 'roke', which is a most penetrating and wetting mist. There are, however, very few references in early times to these unpleasant and dangerous phases of nature. Of course Strabo, at the beginning of the first century said, concerning this country, that even in fine weather mists prevailed so long that through the whole day, the

sun is visible only for three or four hours about noon'. In Roman times mist played its part in a struggle between the

296 Emperor and a charlatan. In 296 the Emperor Constantius Chlorus had fitted out a fleet against Allectus who had, by assassination, usurped power in Britain. One division of the Imperial navy had passed up the Thames; but, another, commanded by Asclepiodotus, slipped passed the ships of Allectus, in a fog, and gained a landing to the west of the Isle of Wight, whence he and his force advanced eastward on London.[1]

It was a prevailing mist that hung over the land at 6 a.m.

1138 on 22 August, 1138, and so delayed the movements of the forces on Cowton Moor, near Northallerton, where the battle of the Standard was fought.[2] Similar delay occurred on Easter morning,

1471 14 April, 1471, at the battle of Barnet, for 'when day broke .... both armies found themselves wrapped in impenetrable mist', a circumstance afterwards attributed to the incantations of one, Friar Bungay.[3]

1543/4 On 12 January, 1543/4, 'in the mornyng beganne a grette myst that a man myght not see a two yerddes before hym, and ther was moche harme done in the see that dyvers shippes ware lost and take by Frenche men'.[4] This must have been a very special mist, for it must be supposed that fogs were so ordinarily a part of man's life in England that no one thought it worth

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1. F.G.P.
2. Sir J.R. F. of E.
3. Sir J.R. L and Y.
4. G.F.L.C.

while recording them unless very exceptional. One of these peculiar or exceptional fogs happened at Chester on 22 August,
1603 1603, When 'in the night time a wonderful exhalation of a fiery colour likewise a canopy was seen over this city'.[1] In the same year, London must have had one of her famous, 'Particulars' for the rector of Kensington writes, 'the most thick and striking misty day that ever was'.[2]

Like all other aspects of the weather, mist and fog were not without their show of importance in the first Rebellion.
1642 On 11-12 November, 1642, Charles I, 'taking advantage of a very thick mist marched his army within half a mile of Brentford before he was discovered'. His scheme proved unsuccessful and led to the battle of Turnham Green and so to the check to the Royalist advance on London.[3]

Evelyn appears to be the next recorder of a mist on 18
1655/6 January, 1655/6, which 'gave me a rheum';[4] and on the following 5 December, there was 'a strange darkenes at London like midnight at noone day; it was a strange fogge'.[5] Pepys says that
1663/4 it was 'very foggy' on 24 March, 1663/4; and that 1 February,
1666/7 1666/7 was a 'thick misty' day.[6] Pepys again refers to misty
1667 weather in November 1667, and describes the 11th, as 'a most cold foggy, dark, thick day'.[7] This was a famous fog and is referred

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1. Ormerod.
2. Reg. Kensington.
3. L.M.
4. J.E.D.
5. R.J.D.
6. S.P.D.
7. Ibid.

to by Anthony Wood. 'Such a great mist at London that never the like before was knowne. Horses ran against each other, carts against carts, coaches against coaches etc. One could not see the length of a man before him. The mist, though not soe great, was 10 or 16 miles, westward from London, and likely on other sides. I remember that the same day was at Oxon frosty and clear and sunshiny'.[1] This must have been a fog indeed; but it shows that either fogs were rare or so common that they went unnoticed by diarists, for this is only the third fog mentioned by Pepys. Nor does Wood make another reference
1669 until 25 November, 1669, when there was 'a verie thick mist in the morn'.[2] A real 'pea-souper' seems to have occurred on 15
1670 December, 1670, for Evelyn says, 'It was the thickest and darkest fog on the Thames that was ever known in the memory of man, and I happened to be in the very midst of it'.[3]

Mist played an important part in the battle of Southwold
1672 Bay on 28 May, 1672, when the Duke of York was surprised by De Ruyter in what was called 'a ghostly fog'. Throughout the battle 'the great hulls, flashing flame, rose out of the darknes' only to disappear again for the moment. In such an encounter a decision was difficult. Both sides claimed the victory; probably the Dutch had the best of it'.[4]

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1. A.W.
2. Ibid.
3. J.E.D.
4. A.B.

The exaggerated way in which some diarists refer to fog
1667 is illustrated by Wood's entry on Sunday, 30 December, 1667. 'Such a great mist especially in the morning before 11 that I could not see or know a man 40 of my paces distant'.[1] Presuming Wood's 'paces' to be normal, he had not much to complain of, if this were all. Such a statement makes one suspicious of Wood's judgement on the intensity of any particular fog.
1678 On 6 November, 1678, he writes 'the greatest mist at Weston about 2 in the afternoon that ever I saw'; next day was 'mistier' and on Sunday the 10th, there was 'a verie strange mist in the morne till noone'.[2] What was the real extent of 'greatest', and what was the meaning of 'verie strange'? It was 'verie
1678/9 mistie' at Oxford on 14 February, 1678/9; and in November 'the air thick and moist and the sun not appearing for a weeke together in the latter end'.[3] It was 'foggy for a week before Xtmas day and for the three holy days following' in December,
1685 1685.[4]

Fog was, undoubtedly of great importance in English history
1688 on 5 November, 1688, when the fleet of William of Orange drew near the coast. There was, somewhat curiously, a strong breeze and yet a fog. The place of disembarkation was so wrapt in impenetrable mist that the ships passed westward, all hope of return being made impossible by the easterly gale. It looked as if, owing to the fog, the scheme must end in disaster, when

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1. A.W.
2. Ibid.
3. Ibid.
4. Ibid.

suddenly the wind abated, the mist dispersed, and a gentle breeze from the south wafted the fleet back to Torbay, where an immediate landing was made.[1]

It would appear that eleven years passed without a fog
1699 worthy of record. On 15 November, 1699, however, there seems to have been a bad one, if Evelyn is to be allied upon. 'There happened this week so thick a mist and fog that people lost their way in the streets, it being so intense that no light of candles or torches, yielded any (or but little) direction. I was in it, and in danger. Robberies were committed between the very lights, which were fixed between London and Kensington, on both sides, and whilst coaches and travellers were passing. It began about four in the afternoon, and was quite gone by eight, without any wind to disperse it. At the Thames they beat drums to direct the watermen to make the shore'.[2]

1705 It is not again until 1705, that we read 'For three weeks in May the air was thick with mist', and then came a 'remarkable Blast', that cleared it away.[3] Nearly twenty years passed before we get the word 'foggy' again. Byrone writes, on 21 November,
1723 1723, for London 'the weather is foggy and cold, and I have not
1738 stirred out much'.[4] On 28 October, 1738, Lord Harley states that near Salisbury, 'the day was the reverse of the day before, for as that was the most bright and sunshiny day, this was a

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1. J.M.H.
2. J.E.D.
3. Morton.
4. J.B.R.

strong thick fog that you could not see beyond the set of horses ... we found the road to Marlborough very bad, it was extreme slippery by reason of the great fog that made it wet'.[1]

Again a long interval of time passed, and, at last, on 3
1761 December, 1761, it is recorded that the fog was so thick in London that even the chairmen lost their way. Carriage ran against carriage and much mischief was done.[2] The winter of
1762 1762 as a whole was evidently famous for mist, as Laurence Steme in the following April wrote to Lord Favemberg, 'you had a most
1767 dismal foggy winter in town'.[3] There was, in November, 1767, another thick fog in London attended with serious accidents for certain persons lost their way and were drowned.[4] On 23 December,
1772 1772, there was 'one of the greatest fogs that had ever been remembered', in London, 'by which great damage was done and several people lost their lives .... The darkness was so great that the carriages .... attended with lights .... A gentleman and a lady were overturned in a one horse chaise .... from not being perceived by the driver of one of the western stages, by which accident .... the gentleman's skull was so fractured that he died before he could be brought to town. The fog continued all the night and in the morning several people were found dead in the adjacent fields and places near the metropolis, who, not being able to find their way, were supposed to have perished from the inclemency of the weather'.[5]

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1. Hist. MSS. Com. 29. VI.
2. A.R.
3. Hist. MSS. Com. 55.
4. A.R.
5. Thornton.

1780 Horace Walpole refers to a fog on New Year's day, 1780. 'A fog as thick as butter .... Madam .... I wish you a happy new fog and a thousand of them!' And on the 3rd, he says 'I shall love a fog as long as I live .... now, I understand that text which I never comprehended before of seeing through
1786 a glass darkly'.[1] On 8 January, 1786, Walpole writes of 'solid fogs after ten days snow'.[2] But, after all, these are very rare instances, and it is very remarkable that John Wesley amongst the many references to weather conditions does not mention any great mist or fog. Can it be that they were less numerous? It cannot be that they were so ordinary that they were not recorded, for if so, Horace Walpole would not have written as he did. It may be that it was lack of interest. At least they became more numerous in the nineteenth century.

A fog, attended with accidents, hung over the country, particularly in the neighbourhood of Belfont, on 22 December,
1807 1807. So thick was it that the driver of the Salisbury coach made a mistake and the vehicle struck the side of the bridge and fell into the stream, which was about four feet deep. Two lady passengers were rescued, but one man and two horses were drowned.[3]

1812 A true 'London Particular' occurred on 10 January, 1812, when the city was said to be for several hours in 'palpable darkness'. The sky, wherever any light pervaded it showed the

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1. H.W.L.
2. Ibid. Cf. 8.12. 1790, Hist. MSS. Com. 42.
3. A.R.

colour of bronze. The fog was said to be caused by the accumulation of smoke between two opposite currents. 'The fuliginous cloud was visible, in this instance, from a distance of forty miles'.[1] A more remarkable case of heavy fog
1813 is recorded for 27 December, 1813, a date ever memorable as the beginning of the thirteen weeks frost. On that day 'a most extraordinary fog prevailed in London, and seems to have extended a great many miles round in every direction. It was frequently so thick that it was impossible to see across the street; candles were burnt in most of the shops and counting houses all day long. This fog condensed upon the grass, the trees and .... wooden or iron railings. The grass was covered with a coating of snow (condensed fog), at least half an inch thick. Below the trees in St. James's Park there lay a bed of snow one inch thick .... which had fallen from them. In London the thickness of the fog was still further increased by the smoke of the city; so much so that it produced very sensible effect on the eyes and the coal tar varnish might be distinctly perceived by the smell. But at a distance from town though there was no smoke the fog was very thick; not a breath of wind was perceptible during the whole week'.[2] The next day the fog was no clearer, and the Maidenhead coach missed the road, near Hartford bridge, and was overturned, with the result that one of the passengers, Lord Hawarden, was seriously injured. The Birmingham mail took

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1. H.E.D.B. II.
2. A. of P.

seven hours from the G.P.O. to a mile or two short of Uxbridge, that is, perhaps, twenty miles. By the 31st, the increased fog in London was described as 'truly alarming'.[1]

1817 Another severe fog hung over London on 8 January, 1817;[2]
1820 and there was, on 15 January, 1820, 'one of those dense fogs that choke respiration and obscure intellect'.[3] The period was, at the time, one of intense cold.[4] Worse was to happen on 23
1821 September, 1821. So dense was the fog round Finchley, Barnet and St. Albans, that the guards of the coaches had to walk with the lamps in their hands, and private carriages were preceded by men with lighted links.[5] Vehicles were much damaged and barges collided on the Thames during a very dense fog over
1828 London on Tuesday, 11 November, 1828; while, on the next day, the fog having become even more impenetrable there were several accidents and delays to coaches.[6] Drowning accidents in the London Docks and in Hermitage basin were due to a thick fog on
1835 17 November, 1835.[7]

It was 'dripping foggy weather' in Staffordshire on 14-17
1837 January, 1837.[8] There was a bad fog off the Isle of Wight on
1846/7 1 November, 1846; and again, on 16 January, 1847, when, owing to the thickness of the fog, <u>H.M.S. Sphynx</u> was wrecked in

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1. H.E.D.B.
2. A.R.
3. L. in W.D.
4. <u>Nature</u>, 1930.
5. ?A.R.
6. Ibid.
7. Ibid.
8. W.D.D.

Brixton Bay. Loss of life on the railway was caused by fog at
1850 8 a.m. on 18 September, 1850. Confused by the fog nine navvies stepped in front of the uptrain at Brentwood and were killed. A railway accident, due to the density of the fog, occurred near
1853 Mangotsfield on 9 March, 1853. Owing to the fog the mail train had stopped and was run into by a good's train with the result that two persons were killed and five injured. Another
1853 accident due to the same cause was on 29 December, 1853, when an Oldham train ran into a stationary train at Newton Heath,[1] and two persons were killed.

London and the surrounding districts suffered from a dense
1856 fog on 29 October, 1856, which proved as frequently, the percursor of a severe frost. A shipwreck caused by fog or roke,
1861 off Flamborough Head on 12 January, 1861, led to the loss of a cargo worth £80,000, but all lives were saved. There had been gales, but sea-mist can alone account for this wreck. The year
1864 1864 was a very foggy one in London, and thick fogs occurred on 8-14 January, on 29 February, on 25-28 September and on 9-12
1870 December. The weather, on Lord Mayor's Day, 9 November, 1870 was 'most inauspicious' as London was 'wrapped in one of the densest fogs ever known within living memory'.[2] There was fog
1872 and snow for the University Boat Race on 23 March, 1872.[3] Round
1873 about 9 December, 1873, London was in a thick fog for seven days,[4] there had been 'nothing similar to it for years'. The effects

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1. A.R.
2. Ibid.
3. Ibid.
4. <u>Nature</u>, 1930.

of the continued asphyxiation, for it was no less, were very severe on many sufferers from illness;[1] and there was a great increase of deaths from respiratory diseases.[2] The fog caused great inconvenience because that week was the annual Cattle Show, and several of the stock died of disease and others had to be slaughtered.[3]

A railway accident, solely due to fog, occurred near Wigan,
1874 on 20 February, 1874, when a mail train ran into a stationary coal train; but, fortunately was not of an especially serious character. Three days later, the then newly founded Rugby International Football Match between England and Scotland at Kennington Oval, was much spoilt by 'a dull fog and Scotch mist' which 'hung over the scene'. Amongst sea-disasters, attributable to fog, at this period, must be counted the wreck of the fine German mail-steamship, the '<u>Schiller</u>', bound from New York to Hamburg. Owing to very dense fog she was wrecked on the Retarrier Ledges, near the Bishop Lighthouse, Scilly Isles, with a loss of more than 300 lives.[4]

It is difficult to know whether to describe the 'extra-
1875 ordinary darkness', over London, on 4 December, 1875, as a fog in the true sense. The weather between 12 and 2 p.m. was 'thickish', but there was not a 'dense' fog; and yet everywhere it was as 'dark as night'. It was intensely cold and snow was falling. Early in the afternoon the darkness disappeared with peculiar rapidity.[5]

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1. A.R.
2. <u>Nature</u>, 1930.
3. A.R.
4. Ibid.
5. Ibid.

Once again it looked as if the University Boat Race would
1878 be rowed in a fog on 13 April, 1878. The morning broke fine but very foggy; fortunately for all concerned this heavy pall cleared off by 8.30.[1] The same year, on 26 November, there was a serious accident in the Mersey, owing to fog, when, after a collision between a ferry-steamer and a barque several lives were lost and a number of persons were injured.[2] London, and the greater part of England, were wrapped in impenetrable fog
1879 on Christmas Day of the ever-memorable miserable year 1879.
1880 In the following spring, on 20 March, 1880, the University Boat Race, which had been fixed for 7.45 a.m. had to be postponed on account of dense fog, which was said to have been 'one of the thickest in that season of heavy fog'.[3] An unusual fog on 17 July, of the same year, caused a serious collision off Dungeness,
1881 but no lives were lost. On 17 January, 1881, when the temperature was below zero, London was enveloped in fog, but it was dissipated by the gale and snow-storm of the next day.[4] Another Mersey fog caused, owing to collision, the loss of ten lives on
1883 7 January, 1883.[5]

A fog that might have had very disagreeable and serious
1886 consequences prevailed in London on 10 February, 1886. Two days before there had been a meeting of unemployed in Trafalgar

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1. Ibid.
2. Ibid.
3. C.M.P.
4. A.R.
5. Ibid.

Square, which ended in a procession Westwards and the pillaging and wrecking of many shops. When the all pervading fog fell upon the metropolis on the 10th, the people were much alarmed that the mob would take advantage of it; but, as a matter of fact no looting took place.[1] Round 23 March, of the same year, there was a persistent fog for three days, in the Channel, during which the Admirality Pier, at Dover, was damaged by a vessel colliding with it. Towards the end of the year a three-days fog, about 24 November, impeded business in all directions owing to its persistency and 'great denseness'. A curious fog-
1887 pall overhung London on 15 March, 1887. It was a 'black' fog, and caused the streets to be perfectly dark, but it lay well above the tops of the houses. It was a precursor of snow.[2]

Railway accidents again occurred near London, particularly on the London, Chatham and Dover Railway, owing to dense fog on
1888 31 December, 1888. At a somewhat unusual time of year, 20 May,
1889 1889, a fog in the Channel caused a collision leading to the
1890 loss of six lives. Between 14 and 15 October, 1890 London was enveloped in fog; and on 10 December, of the same year, owing to the thick fog that then prevailed a Brighton train ran into a truck near Stoats Hill: mercifully there was no loss of life. Towards the end of that month the cold became extreme, and on the 22nd, when the temperature was about 9 degrees there was a 'persistent' fog in London.[3]

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1. Ibid.
2. Ibid.
3. Ibid.

A ship went ashore and was refloated at Beachy Head in a
1891 thick fog which prevailed in the Channel on 26 June, 1891. The
same year London was in the clutches of a fog combined with a
sharp frost from 20-25 December. Both ended on Christmas Day.
1894 Two railway accidents due to fog occurred in October, 1894.
The first at Thirsk on the 4th, when an express ran into a
mineral train causing one death; and the second near Chatham
on the 9th, when a luggage train ran into a waggon and seven
1895 persons were killed.[1] In the midst of the great frost in 1895,
on 23 January, there was in London, shortly before 10 a.m.,
intense darkness and thick fog, followed by a sharp thunderstorm
and hail, and a fall in temperature of five degrees. From a
dead calm the wind rose to a gale and dissipated the fog.[2] The
following September, on the 19th, there was a collision in the
Channel owing to fog, and on 19 December, owing to thickness in
the Solent, passengers had to be landed by tug at Southampton.
1896 A Cunard liner ran on the rocks at Anglesey on 1 January, 1896,
but all were saved. Not so, after a collision in a fog off
1897 Beachy Head, when eight persons were drowned on 5 June, 1897.
On 29 September, two torpedo destroyers ran on the rocks, near
Fowey, in a very dense fog. There were minor accidents in the
Channel on 18 December, and the fog that caused these hung over
London for several hours, and was renewed on Christmas Eve when
traffic was much impeded. At the time London was in the grip
of a frost of considerable severity.[3]

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1. Ibid.
2. <u>Nature</u>, 1930.
3. A.R.

A railway disaster due to fog occurred at Wolverhampton on the London and North Western Railway, whereby two men were
1899 killed on 19 October, 1899. A troopship grounded on Bembridge Ledge, I. of W., on 7 December, and on the 23rd, owing to a very dense fog, over most of the South of England, there were two railway accidents, one at Wivelsfield, where six persons were killed; and the other at Slough where two were injured.[1] On
1900 22 December, 1900, London was 'in Woolly sea-fog .... not very thick but clammy',[2] which was rather strange as there had been a coastal gale for twenty four hours the day before.

The next serious fog producing accidents in the Thames was
1901 on 7 November, 1901. There was another of 'unusual thickness',
1904 on 21 December, 1904.[3] Again in 1906 fogs caused shipping
1906 disasters. On 30 May, H.M.S. Montagu ran ashore on Lundy Island; and on 17 March, 1907, a White Star liner went ashore,
1908 without loss of lives near the Lizard. On 29 September, 1908, owing to fog there was a collision off Dungeness, again all on board were saved. London and the Channel were enveloped in
1909 thick fog on 27-28 January, 1909. There was a collision
1910 entailing twelve deaths off Holyhead on 2 January, 1910, and on the following 18 April a ship went ashore in the Scilly Isles. That year the whole Channel was filled with fog on 22 December.

Did fogs grow less in number? Did the War take up the complete attention of the Chroniclers? There was a very thick

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1. Ibid.
2. F.Y.P.
3. A.R.

1916 fog in London on 26 December, 1916.[1] But this was beaten on
1918 31 January, 1918, by the densest fog recorded in London for many years. Rail and road traffic was paralysed over all the lower ground from Hammersmith to Twickenham, and in many places vision was limited to not more than a yard.[2] A dense white fog invaded
1923 London 17 January, 1923;[3] and on polling day, 6 December, of the same year a thick fog covered the whole of the Metropolitan
1924 area. A year later, on 11 December, 1924, one of the worst fogs known for many years prevailed in London; and shortly
1925 after, on 10-13 January, 1925, a very dense fog lasted for three days over the greater part of South East England. This, how-
1930 ever, did not prove as serious as that of 22 December, 1930, when the fog was responsible for many accidents.[4]

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1. Ibid.
2. Nature, 1930.
3. A.R.
4. Ibid.

CHAPTER IX.

Rains of Blood.

And all the waters that were in the rivers
were turned to blood.

Exodus, VII. 20.

In a superstitious age few things would have been more alarming than a rain of blood. The very fact, as far as England was concerned, that these terrible portents were few and far between, only tended to increase the horror when they did occur. They were always regarded as precursors of something still more terrible. There are, however, apparently two scientific causes for what is really not a rain of blood at all. The first is that this peculiar phenomenon may be due to the sands of the Sahara, south of Morocco, being taken by a strong south east wind up to a great height, and travelling on the western side of an anticyclone, over South West Europe, be deposited in brownish red drops of water. Blood rain can, however, also be caused by the 'blood rain' plant, <u>spharella pluvialis</u>, a microscopical water plant, which causes the water to assume a deep crimson tint, and to resemble a pool of blood. This organism is isually found in small pools, the water of which is occasionally carried up into the air by small

whirlwinds and afterwards falls as 'blood' rain.[1]

This knowledge was not vouchsafed to our Anglo-Saxon
685 ancestors, so that those dwelling in this country in 685, must
have been astounded, and it is remarkable that the entry in the
Anglo-Saxon Chronicle is as bald as it is. It only recorded
that, 'In this year there was bloody rain in Britain'.[2] Twelve
697 year later, according to Holinshed, 'corn as it was gathered in
the harvest there appeared bloodie'.[3]

1459/60 In the spring of 1459/60 there was another instance of
this peculiar phenomenon. 'In a lytylle towne in Bedfordshyre,
there fylle a bloody rayne, where of the rede dropys appered in
shetes, the whiche a woman had brought out for to drye'.[4] It
is not difficult to imagine her utter consternation. She had
never heard of such a terror. Was it the blood of the saints
that was falling from heaven? Was it some awful warning of
blood-shed in the near future? Whatever it was the sheets
would appear to be ruined.

Nearly a hundred years passed before the next instance
of a rain of blood was recorded. Again one is surprised at
the lack of comment on the part of the chronicler. On Whitsun
1552 Eve, 4 June, 1552, 'it rayned in dyvers places in London that it
was sene lynge in dyvers places on the erbbes [herbs or grass]
as redde as syne'.[5]

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1. Nature, 1930.
2. A.S.C.
3. Holinshed C.
4. Eng. Chron. 1377-1461.
5. G.F.L.C.

1607 Fifty-five years later, on 11 June, 1607, Devon had a visitation. 'This day fell in Colyton, not far from the town, rain, being as it seemed a thunder shower, and some thunder heard with all, among which were certain drops fell like blood, which stained those things as it fell on'.[1]

It is remarkable that none of our diarists or letter-writers, like Pepys, Evelyn, Wood, Wesley or Walpole ever record rains of blood. Such events seem to be rare; and more than two hundred years elapsed without any record of anything of the
1826 kind. At last, on 25 August, 1826, there was a rain of blood of 'brilliant scarlet colour', in London, followed, later in the evening, by a tornado.[2] The next occurrence seems to have been
1889 at Cardiff on 24 May, 1889, when it is stated that 'after a spell of very hot weather a shower of red-rain fell'.[3]

The best authenticated instance of this peculiar downpour
1903 was on 21-23 February, 1903, when 'red rain' fell over an area of 20,000 square miles in Southern England and Wales. 'It is estimated that' in that area, 'the total quantity of dust was not less than 10 million tons .... the fall was associated with oppressive heat and visibility was limited to a short distance.[4] This seems to be the last 'rain of blood' in this country.

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1. W.Y.D.
2. H.E.D.B.
3. A.R.
4. Nature, 1930.

APPENDIX A.

Analysis of the weather, year by year referred to in the preceding pages, denoted by letter:-

c. = Cold and Frost: s. = Snow: w. = Warm and Mild: d. = Drought or dry: t. = Thunder Storms: h. = Hail: r. = Rain: fl. = Floods: wl. = Wind on Land: wc. = Wind on Coast: f. = Fog and Mist: b. = Rains of Blood.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
55 B.C.								wc.					
54 B.C.						wc.	wc.						
296 A.D.													f.
685													b.
697								b.					
761	c.s.	c.s.											
793													t.
877	wc.												
896													wc.
937												c.s.	
938	c.s.	c.s.	c.s.										
944													wl.
991	c.s.	c.s.	c.s.	c.s.									
1000													d.
1024								r.	r.				
1034						c.							
1041								r.	r.				wl.
1066								wc.	wc.				
1072											c.s.	c.s.	
1073	c.s.	c.s.	c.s.	c.s.									
1076											c.s.	c.s.	
1077	c.s.	c.s.	c.s.	c.s.									
1078						d.	d.	d.					
1080												wl.	
1081												wl.	
1086													wl.t.
1087								r.	r.				
1089								r.	r.	r.			

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1091										t.wl. fl.			
1093													wl.c.s.
1095													wl.
1097											r.		
1099											fl.		
1103								wl.					
1106	c.s.												
1109													t.
1110					c.								
1111													t.
1112													w.
1114			d.										wl.
1115	c.s.	c.s.	c.s.	c.s.									
1117												t.h.	r.
1118	t.											wl.	
1122			wl.						wl.				
1124							d.	d.	d.				
1125								fl.					
1132													wl.
1135										wl.t.			
1138								f.					
1141		r.fl.	f.r.										
1142												c.s.	
1144								w.					
1149												c.s.	
1150	c.s.	c.s.											
1151												c.s.	
1152	c.s.	c.s.											
1154								r.fl.					
1163						t.							
1172													t.
1177							wl.t.h.					wl.	
1178	c.s.	c.s.	c.s.										
1189			t.			t.h.							
1190							d.	d.	d.				
1193	t.												wl.t.
1198							t.r.						
1201					t.			r.	r.	r.			
1205	c.	c.	c.			c.							

597

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1206	c.	c.	c.				t.						
1207	w^{l}.s.												
1211	c.s.	c.s.										w^{l}.	
1215								r.	r.				w^{l}.
1216					w^{c}.								
1218											w^{c}.		
1220													r.
1221							r.						
1222		t.	c.s.	c.s.?							t.	w^{l}.	
1223								r.	r.	r.	r.		
1224	w^{l}.												
1225													f^{l}.
1227							t.					f^{l}.	
1228	f^{l}.	f^{l}.				t.	t.	t.	r.	r.			
1230						t.							
1232											t.		
1233			t.fl.	fl.	r.fl.						t.		
1234	c.s.	c.s.					r.						w^{l}.
1235													w^{l}.?
1236	r.	r.fl.									w^{c}.w^{l}.	w^{l}.t.	
1237											w^{l}.t.		
1238	w^{l}.t.								w^{c}.				
1239				r.	r.	r.	r.						
1240			w^{l}.										r.h.
1241	w^{l}.		w.d.	w.d.	w.d.	w.d.	w.d.	w.d.	w.d.	w.d.		c.s.	
1242											t.w^{l}.r.fl.		
1243			t.										
1244											t.		
1246							t.h.fl.						
1247			r.	r.	r.	r.	r.						
1249						r.fl.						t.	
1250										w^{c}.		t.w^{l}.	
1251					t.			t.	r.				
1252	w^{l}.w^{c}.		d.	d.	d.	d.				r.c.			
1253												t.s.	
1254	w^{l}.	wl.				r.h.				r.t.			
1255		w^{l}.r.	wl.r.										

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1256						wl.t.h.fl.	r.	r.	r.				
1257		r.	r.	r.					r.	r.			
1258	w.	c.s.	c.s.					r.	r.	r.	r.	t.r.	
1260						t.h.							
1261	c.s.												
1262						t.							
1265					t.			t.r.				t.wl.	
1268	t.h.wl.			t.r.									
1269	c.s.	c.s.									c.s.	c.s.	
1270			r.fl.			t.					c.s.	c.s.	
1271	c.s.	c.s.n	r.fl.					r.	r.	r.	r.		
1273			c.s.										
1274												t.	
1277	t.	r.	r.	d.t.fl.									
1278	w.	w.											
1279					wl.								
1280	r.c.	c.	c.										
1281												c.s.	
1282	c.s.	c.s.											
1284				s.h.t.wl.									
1286					wl.t.h.								
1288							t.h.						
1289									r.	r.	r.	r.t.	
1290	r.	w.	w.			t.wl.						c.s.	
1291	c.s.										fl.		
1292										t.fl.	wl.		
1293				wl.s.t.	r.								wc.
1294								r.	r.	r.	r.	r.	
1295	r.	r.	r.										
1300	wl.												
1313											t.		
1314					t.			r.	r.				
1315								r.	r.	r.			
1316			r.fl.					r.fl.	r.fl.	r.fl.			
1335		r.fl.	r.fl.										
1339													fl.r.
1340													wl.
1346													r.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1348						r.	r.	r.	r.	r.	r.	r.	
1350	c.	c.											
1360													fl.
1361			w^{l}.										
1362	w^{l}.												
1363												c.s.	
1364	c.s.	c.s.	c.s.										w^{c}.
1369							r.	r.					
1382	w^{c}.												
1389							r.	r.	r.				
1393									t. fl.				
1399							w^{c}.						
1400									fl.				
1402			r.		t.								
1404												c.s.	
1405	c.s.	c.s.											
1407												c.s.	
1408	c.s.	c.s.	c.s.										
1409	c.s.	c.s.	c.s.										
1412													fl.
1413													fl.
1416						t.							
1417				w^{c}.									
1418												w^{l}.	
1421											w^{c}.		
1424												t.r.w^{l}.	
1427				r.	r.	r.	r.	r.	r.				
1434								r.	r.		c.s.	c.s.	
1435	c.s.	c.s.											
1439	w^{l}.							r.w^{l}.	r.		w^{l}.		
1444?		t.											
1445					t.r.								
1446												t.	
1447				fl.									
1450		r.t.				t.				fl.			
1457													t.
1460							r.fl.						b.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1461		r.	fl.c.s.										
1464													t.
1465			d.	d.	d.	d.	d.					c.s.	
1471			w^c.	f.									
1473													d.
1480												w^c.	
1484										r.	r.fl.		
1496							w.	w.					
1499											fl.w^l.t.		
1500													fl.
1506	w^l.												
1511	c.												
1516									d.	d.	d.	d.	
1517	c.s.d.	d.	d.	d.									
1519													t.
1525													r.w^l.c.
1527				r.	r.	r.				r.			
1530											w^l.fl.		
1536												c.s.	
1540		d.	d.	d.	d.	d.	d.	d.	d.				s.
1541						d.	d.	d.					
1543						r.	r.	r.				fl.	
1544	f.c.												
1545						r.t.h.	t.						
1548	w^l.					d.	d.	d.					
1549				w^l.				r.fl.					
1551						w^l.h.							
1552						b.							
1553											r.	r.	
1554			r.										
1555									r.fl.				
1557						d.	d.	d.					
1558	w^c.						t.h.						
1559	t.								t.			w^l.	
1560	w^c.			r.t.		r.w.							
1561						t.	t.					s.	
1562		t.s.											

Year	Jan.	Feb.	Mar.	Apr.	May	June
1563					t.r.	
1564						
1565	c.s.			h.		
1566			t.r.			d.
1569		r.				
1570						
1571	c.s.					
1573						r.h.fl.
1574	w.					
1575		fl.				
1577						h.r.
1578					d.	d.
1579		c.s.	r.	s.		
1581						
1582		w.	r.	r.		
1583						
1587						
1588						
1590	w^{l}.					
1591						
1592					w^{l}.	
1593						
1594	w^{l}.		w^{l}.	r.	r.	r.
1595			c.			
1596	w^{c}.					
1597	r.fl.					
1598						
1599						
1600						
1601		r.				r.fl.
1602					w.	
1603						
1604						c.d.
1605				c.s.h.		
1607	w^{c}.w^{l}.fl.		w.			b.
1608	c.s.	c.s.	c.s.		c.	
1609		c.			d.	d.
1611				d.	d.	
1613	t.					
1614	w^{c}.					
1615	c.s.	c.s.	c.s.fl.	d.	d.	d.
1616						
1617	r.w^{l}.					r.
1618	r.c.	s.				
1621					c.	
1622	c.t.					
1623		w^{c}.r.				
1624						d.
1625	w.	w^{c}.	w^{l}.r.s.			c.r.
1626		r.	r.			r.h.w^{l}.
1627						

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1563						t.	
1564						c.s.	
1565	t.h.					w^{l}.	
1566	d.	d.	d.				
1569							
1570				w^{c}.		c.s.	
1571				w^{c}.			
1573					w.	w.	
1574							
1575							
1577		t.					
1578	d.	d.	d.				
1579				w^{l}.r.	r.c.s.		
1581					d.	d.	
1582		r.t.				t.	
1583		w^{l}.					
1587	w.	w.					
1588	w^{c}.		w^{c}.				
1590				w^{l}.			
1591				w^{l}.		w^{l}.	
1592			w^{l}.				
1593			w^{l}.h.r.				
1594	r.	r.	r.	r.	r.	c.	
1595		r.					
1596	t.r.	r.	r.	r.			
1597	t.		r.h.				
1598		w.					
1599						w^{l}.	
1600		w^{l}.					
1601	w.	w.					
1602				w.			
1603				w.	f.		
1604	d.	d.			c.		
1605				r.			
1607					c.s.		
1608							
1609	r.	r.			c.		
1611							
1613				w^{c}.			
1614							
1615	d.	d.	d.				
1616					r.	c.w^{l}.	
1617	r.w.	w.r.					
1618					r.		
1621		c.r.	c.r.			c.	
1622		w^{l}.					
1623		r.	r.				
1624	d.	d.					
1625	r.				s.		
1626	r.	w.t.					
1627			r.w^{c}.	w.w^{l}.w.c.	w^{l}.		

Year	Jan.	Feb.	Mar.	Apr.	May.	June
1628	w^1.	c.	c.	c.r.	c.r.t.	c.r.t.
1629						c.
1630						w.
1631						
1633		c.		d.		
1634					d.	d.
1635	s.		s.fl.	d.	d.	d.
1636						w^c.
1637	w^1.					w.
1638						
1639					c.	
1640	c.		w^1.	fl.	t.	
1641						
1642	c.s.	c.s.				
1643		w^c.w.		w.		
1644	s.		c.s.		r.	
1645			r.			
1646	c.s.					
1647	s.	c.s.		r.c.		
1648	w.			c.	w.	r.
1649	w^c.r.					w.
1650				w.r.		r.
1651			c.			
1652			r.w.			w.t.
1654					d.	d.
1655			r.			r.
1656	c.f.					
1657				fl.		
1658	c.s.	s.c.	c.s.	r.		c.r.h.
1659						d.
1660	c.s.	r.	r.w^1	w^c.	w.	
1661	w.	w.	r.fl.	r.fl.		r.
1662	w.t.r.	t.h.w^1.				
1663		c.s.	w.r.c.s.	c.r.fl.	w.t.fl.	
1664	c.	c.	c.s.	r.h.	fl.w.h.	r.
1665	c.	c.		w.		w.d.
1666	c.t.w^1.	c.s.d.	d.	r.w.	t.	t.w.d.
1667	c.s.	c.f.	w.c.s.r.	c.w.r.	w.	w.d.
1668	c.s.r.	w.	c.	r.w.	r.w.	r.h.w.
1669	c.s.		w.c.s.d.	r.	r.w.	
1670	r.w^1.c.	c.		r.		
1671						
1672		c.s.				w.
1673						r.fl.
1674	fl.	r.fl.	c.s.		r.t.	d.
1675	w.	c.				c.r.
1676	c.s.fl.	r.w.	d.	d.	d.	
1677	c.s.	c.s.	c.s.	r.	r.	r.
1678	r.t.h.	r.t.h.				
1679	c.w.c.s.	c.s.d.	c.s.r.		t.	
1680		r.			t.h.r.	fl.w.

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1628					w^1.		
1629			r.fl.				
1630							
1631	t.h.			w^c.r.			
1633		r.					
1634	d.	w.	w.	w.	c.s.		
1635	d.						
1636	d.	d.			w^1.fl.		
1637		r.w^1.w^c.					
1638		w.t.		c.			
1639						w^1.	fl.
1640		t.					
1641					c.s.	c.s.	
1642	r.	w^1.	r.	r.c.	f.w^c.	s.	
1643			r.		w^1.s.	w^c.c.	
1644	w.	r.		c.s.r.		s.	
1645						c.	
1646			r.	r.w^c.	r.c.		
1647				w.			w.
1648		r.	r.		c.r.		
1649	d.	t.h.					
1650		r.	r.	r.	fl.		
1651			r.				
1652						c.	
1654	d.	r.			s.		
1655	r.	r.		r.	r.	c.s.	
1656	d.					f.	
1657		r.		w^1.			
1658		w^1.	r.	fl.	c.	c.s.	
1659	d.w^1.	r.					
1660	r.		r.	r.	c.	w^1.t.r.	
1661		r.	r.		r.c.fl.	r.c.	
1662			r.		s.r.w^c.	c.s.r.	
1663	w.r.fl.	r.c.		r.		c.	
1664	w.	t.	r.c.	r.c.	r.	c.	
1665	d.		r.	r.c.	r.c.	c.	
1666	d.	w.d.	w^1.d.	r.fl.	c.	r.c.	
1667	w.d.	w.c.r.	r.t.		c.f.s.	c.	
1668	w.	w.	r.w.		r.	r.fl.	
1669		d.	d.r.	w^1.	f.t.d.	d.c.s.	
1670				w^1.t.		f.t.	
1671	w.		r.	r.	c.s.	c.s.	
1672		r.	r.t.	r.	r.	r.w.fl.	
1673			r.fl.				
1674	r.		d.				
1675	r.	w.	w.d.	d.	d.		
1676		d.	r.	r.	c.	c.s.	
1677		r.	w.	w.c.	c.	r.fl.f.	
1678	d.	w.	w.r.		f.	c.	
1679			r.	r.	r.fl.	c.r.	
1680	r.				fl.	c.s.	

Year	Jan.	Feb.	Mar.	Apr.	May	June
1681	c.			w.d.	w.d.	d.
1682	fl.w.	fl.	c.	fl.r.	r.fl.	
1683					r.	r.fl.
1684	c.s.	c.s.	c.s.			
1685	c.s.	c.	r.	w^{l}.d.	d.	d.
1686	r.fl.	w.d.	d.		r.c.	r.t.
1687	d.	d.	r.t.s.		w^{l}.	w.
1688				s.		c.r.fl.
1689	c.s.		w^{l}r.fl.	r.	w.c.s.	
1690	w^{l}.fl.s.	c.d.	c.d.			
1691			w^{c}.			
1692	c.s.	c.s.	t.c.	c.	c.	r.w^{l}.c.
1693		w.s.	c.s.t.	r.		r.h.
1694	c.		c.	d.	d.	
1695	c.s.	c.s.	c.s.	c.	r.	
1696		r.c.	c.	w.		r.fl.
1697	c.s.	c.s.w^{l}.	r.c.	t.	t.w^{l}.	h.
1698	c.s.	c.s.		c.s.	c.s.	r.
1699		w^{l}.r.			d.	d.r.d.
1700	w.	c.r.	w.	t.w.		w.
1701	c.s.fl.w^{l}.	w^{l}.d.	d.	d.	d.	w.
1702	w.			c.	d.	w.
1703						r.
1704			w^{l}.	w.	t.	d.
1705		w.	d.	w.	f.	d.
1706						w.
1707						
1708				c.		c.
1709	c.s.		c.s.			
1710		r.fl.			w.	w.
1711	c.s.	c.s.r.	r.t.r.	r.fl.	w.r.h.	t.h.w.
1712	t.w.	c.	c.r.			r.
1713	r.w^{l}.	r.	r.	r.s.	r.c.	r.
1714	d.	d.w^{l}.	r.fl.			d.
1715	c.s.					
1716	c.s.	c.s.	d.	d.	d.t.	d.
1717						
1718				c.		r.
1719	r.	r.fl.				
1720			w.	w.		d.
1721	w.fl.	c.	c.		c.	
1722					fl.	
1723						r.
1724						t.
1725		d.		w.		
1726	r.			r.	r.	r.
1727				w.		
1728						
1729	c.r.	c.r.	c.s.			
1730	c.		r.			
1731	c.		w.			
1732						

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1681				r.	d.	r.w.	
1682	t.		w.	c.		w.fl.	
1683			r.w.c.			c.s.	
1684	w.					c.	
1685	r.	d.	d.		r.w.	r.w.	
1686						r.fl.	
1687		w.d.	r.	r.	r.fl.		
1688					f.wc.	c.s.	
1689				r.	s.	r.s.	
1690	d.	d.t.c.			w.wl.	c.s.	
1691	d.t.				w.	w.	
1692	r.	r.	r.c.	c.r.		wl.c.	
1693		w.r.		w.r.		s.t.	
1694		r.	d.	d.		c.s.	
1695	r.	c.r.	c.r.	w.d.	r.		
1696	r.		w.	r.	r.fl.	c.s.	
1697			c.	wc.	c.	c.s.	
1698					c.	w.t.fl.	
1699	d.	r.	w.	w.c.	f.	w.	
1700	w.			r.			
1701	w.	w.d.				wl.	
1702						c.s.	
1703	r.			t.	wl.	wl.	
1704	d.fl.t.	t.	w.	d.		c.	
1705	w.d.	h.wc.				wl.	
1706	w.r.fl.		r.				
1707	w.d.t.	w.d.	r.	wc.f.		wl.	
1708	t.	t.	r.	c.	c.s.	c.s.	
1709			r.				
1710	w.r.		d.	c.	w.r.	w.r.	
1711	r.	r.	r.	t.r.	r.	c.s.	
1712	w.r.				w.wl.r.	c.s.	
1713	r.		d.	d.		w.	
1714	d.	d.					
1715						c.s.	
1716	d.	d.	r.c.				
1717		wl.					
1718			t.				t.
1719							
1720	d.	d.				t.w.	
1721							
1722							
1723	d.	d.			r.f.c.		
1724							
1725							fl.
1726		r.	r.				fl.
1727						w.	
1728							
1729						t.	
1730							
1731							
1732		w.	w.		c.		

Year	Jan.	Feb.	Mar.	Apr.	May	June
1733	w.					t.
1734					r.	r.
1735	w^c.w^l.r.s.		r.	r.		
1736						r.fl.
1737	c.s.r.		r.	w.	w.t.	
1738		c.				r.
1739	t.	r.		r.	t.r.	r.
1740	c.s.	c.				d.
1741		c.r.				
1742						w.
1743	r.	c.s.	w.	c.	w.	
1744	w.			c.s.r.		t.
1745	r.	r.s.			h.	c.r.
1746	c.s.					d.w^c.t.
1747	c.s.		c.s.			t.r.
1748		c.s.	w^c.	r.	r.	h.
1749						
1750		w^l.t.	wc.r.	r.c.		t.
1751		c.w^l.		r.s.	r.fl.t.	
1752				w^l.r.		w.
1753		s.fl.	h.		w.	h.
1754		w^c.				h.
1755			d.	r.		r.
1756	r.		r.s.		h.	
1757	t.		w^l.	wl.r.	r.w^l.	
1758		r.	r.s.			
1759		w.	w.c.	r.		r.fl.
1760	c.s.	w^l.	r.f.			
1761	c.					r.w.
1762	c.w^c.w^l.	w^l.s.	c.r.	f.		
1763	c.s.	fl.			c.	r.
1764	r.w^l.w^c.			r.	r.	t.w.
1765	r.		s.	r.		
1766	c.	c.s.	w.s.	r.h.	r.	r.
1767	h.s.c.		r.	r.	r.c.	t.
1768	c.s.	c.s.r.fl.				w.r.fl.
1769	c.r.		r.fl.		r.	r.
1770		t.	c.s.	c.s.	c.	r.
1771	c.	c.	c.s.r.		c.	
1772	c.s.		c.s.r.t.	r.		w.
1773		s.				
1774	c.s.	c.s.r.	r.fl.	r.		r.
1775					d.	t.
1776	c.s.			r.		t.
1777	c.		w.	r.w.	r.	r.
1778	c.r.					
1779	w^l.	w.	w.h.	s.	c.	
1780	f.		wl.	c.		c.w^l.
1781		r.		w.	w.	w.
1782			r.s.	r.s.fl.	c.r.	r.w.
1783				w.		r.c.

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1733							
1734				c.		r.	
1735							
1736							
1737	d.		w.	r.	w^l.		
1738				f.		c.	
1739	r.	r.	t.r.	r.	c.	w.c.	
1740	d.	d.			w^l.w^c.		
1741	c.		w^l.			c.r.	
1742				w^c.		w^c.	
1743	h.						
1744							fl.
1745	r.	r.w.					
1746	d.	d.					
1747	h.					r.w^l.	
1748	r.	r.	r.			w^c.w^l.	
1749	w.	t.	w^c.f.	r.			
1750	t.r.	w.r.	w.r.		w^c.	w^c.	
1751			r.				
1752	r.	r.fl.w^c.				t.h.	
1753	w.	r.			c.		
1754	w.h.	t.		w^c.			
1755	w^c.		r.		r.		
1756		r.fl.	w.	w^c.w^l.			
1757	w^l.w.r.		w.	r.		w^c.	
1758	r.	w.	r.	r.			
1759	w.t.	r.w.	w.		c.s.		
1760			r.			h.w.	
1761		t.h.				f.	
1762	d.	d.t.	r.t.	w^c.t.r.	c.	w^l.c.	
1763	r.	r.t.	r.w.	r.	r.w.	w^l.s.r.	
1764	w.r.						fl.
1765		r.w.					
1766	t.r.	w.	r.			w.	
1767		t.	r.	s.r.	f.	c.s.	fl.
1768		t.r.	r.fl.		r.fl.	r.fl.	
1769	h.	w.r.			w^c.	r.	
1770	w.t.	w.d.	t.r.	r.w.	r.fl.	r.	
1771					r.fl.		
1772						f.	fl.
1773		t.w^l.			r.	w^c.	
1774		r.	r.	r.fl.			
1775	t.		w.	r.fl.w^c.			
1776		r.			w^c.		
1777	t.r.	w.	w.	w^c.		c.	fl.
1778	t.			r.		w^l.	
1779	w.r.d.	d.	w.				
1780		w.d.	t.		w.		
1781	w.	w.					
1782	r.	r.	w.			w.	fl.
1783	w.t.						

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Year	Jan.	Feb.	Mar.	Apr.	May	June
1784	c.r.	c.s.	s.	c.	r.	t.c.r.
1785	s.	s.c.	c.s.			
1786	r.f.c.s.	s.	s.c.	c.r.	t.	
1787		r.	r.		w.	
1788	c.			r.	t.	d.r.
1789	c.s.	r.	c.			
1790	w.	w.	w.r.			w.
1791		w^{l}.		w.		c.fl.
1792	w^{l}.	c.r.	d.	d.	d.	d.
1793						r.
1794						d.
1795	c.s.	c.s.fl.			r.	d.
1796						
1797						
1798						
1799	c.s.	s.				
1800	s.			w.	t.	d.
1801						t.
1802						r.
1803	w^{l}.w^{c}.	w^{l}.				
1804					t.	t.
1805	s.	s.fl.		s.	t.	t.
1806	w^{c}.w^{l}.		s.		t.c.w^{c}.	
1807		c.s.w^{c}.	c.s.		t.w.h.r.fl.	r.fl.
1808	w.w^{c}.	s.		s.	w.w^{l}.	
1809	c.s.r.				t.h.	
1810	c.r.		w.			
1811	c.			w.	h.r.	w^{l}.h.
1812	s.					r.
1813	c.r.				t.	
1814	c.s.	c.s.fl.	w.	w.		t.
1815					t.h.	
1816						
1817	f.					
1818			w^{c}.	w^{l}.	d.	d.
1819	w.	w^{c}.r.fl.			w.	
1820	c.s.					d.
1821	c.s.			t.w.	w.	
1822	r.w.	r.fl.w^{c}.	r.s.fl.		h.	
1823	c.s.	c.s.		c.h.		
1824			s.w.		r.fl.t.	t.
1825						w.
1826	c.	w.fl.			w.	w.h.
1827	c.s.		w^{l}.	t.	t.	w.
1828	w.r.w^{c}.	w^{l}.s.	c.	r.w.	w.	t.
1829	w.	c.s.		c.	w.	d.c.t.
1830	c.s.w^{c}.		w.	c.s.r.t.	w.c.t.	t.
1831	c.s.	w^{c}.fl.			c.	
1832	w.fl.	c.	r.		r.	t.
1833		s.	r.			w^{l}.
1834				w.		

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1784	r.	w.	w.			r.h.s.	
1785		w.		s.			
1786			r.	w.			
1787	r.		r.	r.			fl.
1788		r.t.	w.		w.c.s.w^c.	c.s.	
1789		w.	r.	r.	c.	r.	
1790			c.			t.	fl.
1791		t.		c.		c.	
1792	d.						
1793	w.	w.	w.				
1794	d.			w^c.		c.s.	
1795	d.				w^c.		fl.
1796						c.s.	
1797	t.						
1798							
1799		r.	w^c.r.	r.			
1800	d.	w.	w.	h.w.	w^l.		
1801	t.				w^c.		
1802	r.						
1803	t.h.				t.h.	w^l.	
1804			w.	w.			
1805	t.h.	t.	t.	w^c.			
1806	t.	t.			w^c.	r.t.	
1807	t.h.		r.fl.		w^c.s.	c.s.f.	
1808	d.h.t.	w.	c.			c.s.	
1809	t.	t.					
1810	t.	t.h.	w.		w^l.fl.	w^c.r.	
1811	c.r.	c.r.					
1812				w^c.		c.	
1813	t.r.					c.f.	
1814	d.t.					Wl.r.w^c.	
1815	d.	d.	d.			r.fl.	
1816	r.h.	w^c.r.	r.w^c.				
1817					w.		
1818	d.	d.	d.		w.		
1819	w.h.d.	d.w^c.		w^c.s.			
1820	t.		w.t.		w.		
1821	t.		r.fl.t.		w^l.w.r.fl.	r.w.t.	
1822			r.				
1823	r.						
1824	t.fl.	t.h.	t.	r.w^c.	r.c.w^c.	s.r.w^c.	
1825	w.			w^c.		c.	
1826	t.d.	t.fl.b.	w.				
1827		t.h.r.					
1828	t.fl.	t.r.			w.f.		
1829	d.		r.			r.s.	
1830	t.r.w.			w.		c.s.	
1831	t.	w.t.		wl.w.	c.		
1832		w.				t.wl.r.	
1833					w^c.	w.wl.r.	
1834	w.		w.			w.	

Year	Jan.	Feb.	Mar.	Apr.	May	June
1835	c.r.	t.		t.	t.	t.w.
1836		w^c.				w.d.
1837	c.s.f.			c.s.		r.
1838	c.s.	c.	c.		t.	t.r.
1839	w^l.wc.	c.s.	w.	c.	c.h.	c.
1840	r.	r.fl.	c.		d.	w.
1841	w.t.	c.s.	w.		w.	t.
1842		w.	r.w^l.	r.fl.		w.
1843	w.w^c.		w.	t.h.	r.	r.fl.
1844	w.c.w^c.	w.	c.s.r.		c.	
1845	r.wc.		c.			
1846	r.fl.	w.			w.d.	d.t.
1847	f.					w.
1848			r.	t.		w.
1849	s.			s.	r.fl.	
1850	c.s.		w^c.	w^c.	w.	
1851	w^c.					
1852	w^c.r.	r.			r.	r.h.
1853	w.	c.s.w^c.	w.c.	w^c.	s.	
1854	c.s.	w.s.			t.	t.
1855	c.s.	c.s.	c.s.			
1856	wc.	w^c.	wc.			
1857	wc.		s.h.w^c.	r.		w.
1858	c.s.					d.t.
1859	w.w^c.		r.		h.	t.
1860	wc.	c.s.wl.		w^l.	wl.c.wc.	w^l.c.t.
1861	c.s.w^c.	wc.wl.			w^c.	w.
1862	c.s.fl.w^c.		w^c.w.	w.	w.t.	w.c.
1863	c.s.				r.	r.
1864	c.f.r.	c.s.f.h.	c.r.s.fl.	w.w^c.	w.t.w^{c}h.	r.t.
1865						w.
1866	w^c.		c.		r.c.	
1867	c.s.	r.	s.		c.	
1868	wl.	wl.			w.	w.
1869	wc.	wc.w.	w^c.	r.	r.	w.
1870				w.		w.
1871	c.s.				w.	r.
1872	r.w^c.	r.wc.	r.	t.r.	t.r.	t.r.
1873		s.w^c.	w.			w.
1874		f.r.	r.c.s.	t.	r.w.	t.
1875	w.		s.	w.	f.w.	t.r.
1876	s.		s.	w.s.r.	w.	w.
1877	c.s.r.			r.	t.	r.w.
1878				r.fl.f.		r.t.
1879	c.s.	c.s.		c.	c.s.r.	r.
1880	wc.		f.			[illegible]
1881	c.s.	c.s.	c.s.	c.		w.
1882	w^l.			w.wl.		t.
1883	f.wl.	w^l.fl.	wc.s.			t.
1884	w^l.	r.fl.				
1885		r.	s.			

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1835		w.	w.t.	w.	f.	c.s.	
1836	d.t.	r.				c.s.	
1837	r.	r.		w^l.		r.fl.	
1838	h.r.	t.	w^c.	w^c.w^l.			
1839			r.fl.	w^c.r.	r.fl.	r.	
1840	w.	r.			w^l.	w.	
1841		w.t.		r.c.w^c.		w^l.	
1842	t.w.	w.	w.	w.w^c.	c.s.	w.	
1843	t.	w.r.h.	w.	w^l.		w.	
1844	t.w.	w^c.r.					
1845			r.	r.fl.		w^c.	
1846	d.	d.h.t.	d.	w^c.	f.w^c.	c.s.	
1847	t.		w^l.			w^c.	
1848	r.	t.		r.			
1849	t.			c.		r.fl.w^c.	
1850	w.		f.	w^l.			
1851	t.	t.	w^c.				
1852	t.	t.	t.	w^c.	r.fl.	r.fl.w^l.	
1853	r.c.fl.		w^c.	c.r.fl.		c.s.f.	
1854	c.w.	t.w.	w.	w^c.	w^c.	f.c.s.	
1855	w.	w.		t.w^c.		c.s.	
1856	w.	w.	c.	f.	c.	c.	
1857	w.	t.w.	t.w.	w^c.			
1858				w^c.	w^l.		
1859	t.	t.		w.w^c.	w^c.		
1860	t.			w^c.r.	r.	c.s.	
1861	t.	w.	w.	w.	w^c.w^l.	r.	
1862	c.	c.w^l.c.	c.	w.c.w^c.w^l.		w^l.w.	
1863		r.		w.		w.	
1864	r.w.t.	w.w^c.	r.t.f.h.w^c.		w^c.	c.s.	
1865	w.				w^c.w^l.		
1866		r.	r.		fl.		
1867		t.h.					
1868	w.	w^c.		w^c.		w^l.	
1869			w^c.		r.fl.	fl.	
1870	t.		r.	w^c.	f.	c.s.	
1871	t.r.	t.r.	w^c.		c.	r.	
1872	t.r.	t.r.fl.	r.fl.w^c.		r.fl.w^c.c.	r.w^c.w^l.s.	
1873	t.					c.f.w^l.	
1874	t.		w^c.w^l.	w^c.w^l.	w^c.	w^c.w^l.s.	
1875	r.fl.		w^l.	fl.	r.fl.w^c.	f.s.	
1876	d.	t.	w^c.	w^l.fl.	w^c.	c.s.fl.	
1877	r.fl.			w^c.w^l.	f.w^c.		
1878		t.			s.r.fl.w^c.		
1879	r.	t.h.			c.	c.s.f.w^c.t.	
1880	w.f.t.fl.		r.	r.s.fl.w^c.		s.fl.	
1881				w^l. w^l.	w.w^l.w^c.	w^c.w^l.	
1882		w^l.		w^l. fl.		c.s.	
1883			w^c.	r.fl.		w^l.	fl.
1884	r.	w.			s.	w^l.c.	
1885	d.	t.d.	w^l.t.s.	w^l.fl.			

Year	Jan.	Feb.	Mar.	Apr.	May	June
1886	c.s.	f.	s.f.w^l.		r.fl.	
1887		d.	f.	s.w^l.	w^l.d.	d.
1888	f.	s.	w^c.s.	t.	t.	
1889		w^c.s.	s.fl.		f.b.r.	h.t.
1890	w^c.		c.s.		w.t.r.	r.
1891	c.s.	c.	c.s.w^c.			t.f.
1892		w.c.w^c.				
1893	w.	d.	r.w.	d.	w.	w.
1894	c.s.	w^l.		w.	w.	
1895	c.s.	c.s.	c.w^l.	w.	w.	
1896	f.		c.	d.	d.t.	d.
1897	w^l.s.	s.fl.	w^c.			f.w^c.t.h.
1898		w^c.s.	w^c.s.			
1899	w^l.r.s.t.w^c.	w^c.d.	s.			
1900		c.s.				
1901	r.w.		s.		r.	
1902			r.			
1903		b.w^l.	c.	c.r.	t.	r.
1904	c.	r.fl.	c.s.	r.	r.	r.
1905	w^c.	r.w.	r.w.			
1906	w^c.r.fl.	s.	w^c.		f.	r.fl.
1907			f.		w.	t.r.
1908	c.s.	w^c.w^l.		s.		t.r.
1909	c.f.					
1910	f.			f.	r.fl.t.	t.r.h.
1911	s.w^c.			s.	t.	t.
1912	c.s.				w.	
1913	s.w^c.		t.w^l.	s.r.	r.fl.	
1914	c.s.		r.w^c.			t.h.
1915	r.fl.s.	s.	s.		t.	
1916	w^l.	w^l.s.	s.			
1917						w.r.
1918	f.					
1919				s.		
1920	w^l.s.		w^l.r.s.	w^l.	r.fl.	
1921		d.	d.	d.	d.	d.
1922	w.c.		w^c.		w.	
1923	f.		r.	w.s.	w.h.	r.c.
1924	c.s.w^c.	c.		r.	r.	r.fl.t.
1925	f.r.fl.			w^l.		w.r.
1926	fl.s.					r.
1927	s.w^l.	r.fl.	r.			r.
1928	r.fl.s.	w^l.r.				
1929		c.s.			w^l.	
1930	w^c.s.					r.
1931		r.				

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Uncertain
1886			t.	w.wl.wc.t.	f.	w^{l}.s.h.	
1887	d.	d.t.		w^{c}.	w^{c}.	s.	
1888	c.s.r.	r.fl.		s.	w^{l}.w.	r.fl.f.	
1889	r.	c.r.fl.w^{c}.		w^{c}.	w.w^{l}.s.		
1890	r.t.fl.			f.	w^{l}.w^{c}.s.	f.c.s.	
1891		r.fl.t.w^{c}.	r.w^{l}.	w^{c}.w^{l}.r.fl.	w^{l}.w.c.	w^{c}.f.	
1892	r.w^{c}.			r.fl.		w.c.	
1893	t.h.	t.d.	t.		w^{c}.	w^{c}.w.	
1894			t.	f.w^{c}.	w^{c}.r.fl.	w^{l}.	
1895		t.	f.	w^{c}.	w^{c}.	w^{c}.f.	
1896	t.d.		w^{l}.r.	w^{c}.		w^{c}.t.	
1897	t.	t.	r.w^{l}.f.		w^{c}.	w^{c}.f.r.	
1898	w.	w.t.	w.	w^{l}.r.	r.fl.w^{c}.	w^{c}.w.	
1899			t.	w^{l}.f.	w^{c}.w^{l}.	w^{c}.f.	
1900	t.w.			r.	r.	w^{c}.f.	
1901		t.			f.	c.s.	
1902			h.				
1903	r.	r.	w^{l}.r.	r.			
1904	r.	r.	r.	r.		f.	
1905		t.	w.	w.			
1906		t.fl.w.	w.r.			s.	
1907	t.		w.			w^{c}.	
1908	d.		w^{c}.w.f.	w.		w.s.	
1909	r.	w.	r.fl.	w^{l}.r.		w^{c}.	
1910				w^{c}.	r.	r.fl.w^{c}.f.	
1911	t.w.	w.d.	r.	r.			
1912		r.fl.		r.fl.		r.w^{c}.fl.	
1913				w^{l}.f.		s.	
1914	w.					r.fl.w^{l}.	
1915							
1916				w^{l}.	w^{l}.r.	f.	
1917	r.	r.					
1918							
1919		w.r.				w^{l}.	
1920							
1921	d.	d.	d	d.	d.w^{c}.	w^{l}.	
1922	w^{l}.r.						
1923	w.t.	r.		w^{c}.	w^{l}.r.fl.	f.	
1924	d.t.h.r	r.t.	r.	r.	w^{l}.	f.w^{l}.r.	
1925	t.h.r.					c.w^{l}.r.fl.	
1926	r.h.w^{l}.	r.	r.	r.			
1927	r.t.	r.	r.fl.	w^{l}.fl.		c.r.s.	
1928	d.				w^{l}.		
1929	w.t.	d.	d.		w^{l}.r.fl.	r.fl.	
1930	r.	w.t.				f.	
1931	r.	r.fl.t.	r.fl.t.		r.fl.w^{l}. w^{c}.		